Intelligence analysis and training of intelligence analysts.

By Andrey Spiridonov

Even though intelligence analysis which possesses characteristics of both crafts and professions is frequently referred to as a profession, in actuality it has been practiced more like a craft. As a result, it lacks many of the benefits of for- mal professions, such as structured personnel practices, and possesses no quality control mechanism to ensure the reliability of the individual analyst's output. Turning intelligence analysis from a craft into a profession would provide the opportunity for evolutionary and possibly even revolutionary improvement in both individual and organizational performance due to the adoption of formal personnel practices and standardization of best practices across all intelligence agencies.
Intelligence analysts think of themselves as professionals, but it is not clear what makes intelligence analysis a profession. Former Director of Central Intelligence Allen Dulles called the intelligence occupation a "craft" in his 1963 book "The Craft of Intelligence," but whether that holds true for intelligence analysis is debatable. According to the Merriam Webster dictionary, a craft is "an occupation or trade requiring manual dexterity or artistic skill" whereas a profession is a field that requires "specialized knowledge and often long and intensive academic preparation."
This definitional distinction between a craft and a profession may present a false dichotomy, however. In the information age when knowledge rather than manual dexterity or artistic skill forms the basis of many occupations, some occupations require both a practical skill set and academic preparation. In other words, they may possess characteristics of both crafts and professions.
For example, medicine possesses aspects of both crafts and professions in that it requires a substantial amount of academic training yet relies on the dexterity and skill of its practitioners in addition to their knowledge. According to Dr. Jonathan Clemente a practicing physician and expert in the history of medical intelligence "while much of clinical medicine is firmly grounded in basic science research, there is a substantial practical component to medical practice which cannot be found written in any textbook, and is in- stead passed down from attending physicians to resident physicians to medical students. ... As a result, young medical students are often admonished that medicine is an 'art and not science,' and this is something that is ingrained in physicians from the beginning of medical school education."

Intelligence analysis is similar to the medical profession in that it requires a combination of skills acquired through practical experiences and specialized knowledge acquired through academic training. In fact, as Dr. Clemente and I have argued elsewhere, intelligence analysis is very similar to medical diagnosis. Al though each field has a different substantive focus intelligence agencies produce analysis and estimates regarding events in foreign countries to protect and advance the interests of the United States, while medicine produces diagnoses and prognoses to protect and advance the health of individuals the similarities in processes used to analyze and interpret data are striking.
Practitioners in both fields use approximations of the scientific method – observation, hypothesis, experimentation, and conclusion – as a means to organize and interpret the information they have collected. In his book on the "Psychology of Intelligence Analysis," former CIA officer Richards Heuer has observed that medical diagnosis can be used as an effective analogy for understanding how intelligence analysis works. In addition, Heuer's "concept of the diagnostic of evidence as presented in the discussion of (the application of an analytic method--Analysis of Competing Hypotheses--to intelligence analysis) ...came from

the medical literature."

Both intelligence analysts and physicians use technological tools to assist them in weeding through data and discovering patterns, but these tools are less able to assist them in interpreting the information and deriving meaning and implications. In other words, both medical diagnosis and intelligence analysis require critical thinking and judgment to interpret the evidence that goes above and beyond what can be quantified or automated. Accordingly, the accuracy of intelligence analysis or medical diagnosis may rest in part on the knowledge, skills, and abilities of the practitioners.

Yet despite the similarities between the two occupations and their possession of craft-like characteristics, medicine is a fully acknowledged profession but intelligence analysis is not. So what makes an occupation a profession rather than a craft?

In an era when almost all occupations rely on some form of specialized knowledge and academic preparation, the distinction between "craft" and "profession" now rests less on the dictionary definition than whether or not the occupation possesses formal practices. Some professions such as law and medicine possess structured practices that the others do not, including minimal graduate educational requirements, a selection process consisting of a formal testing program, a formal training program, and continuing professional development programs. In addition, these formal professions also possess mechanisms such as specialized journals for acquiring knowledge about best and worst practices, enabling cumulative learning and improvement over time.

Formal professions also rely on the autonomy and judgment of its certified practitioners, subject to standards to ensure performance competency and a code of ethics that are enforced by members of the occupation. Finally, formal professions have associations that define and certify the requirements necessary for entry into the profession and the standards of professional practice. By way of contrast, occupations without such formal practices may be called professions but lack the formalized practices that legitimize the use of the term.

At first glance, the discussion of craft versus profession may appear to be academic, but there are a number of significant implications for personnel management and the accumulation of occupational knowledge stemming from this categorization. Each path craft or profession can lead to differing personnel practices. For example, traditional crafts emphasize skill development through training and experience while professions rely on a structured academic curriculum supplemented by an apprenticeship program or on-the-job training. The distinction between craft and profession can also lead to different methods for determining quality; crafts tend to rely on word of mouth based on proficiency, while professions rely on externally applied certification standards that individual practitioners must meet. There are even implications regarding the ability of the occupation to aggregate knowledge and learn over time. Crafts rely primarily on the skill of the individual practitioner and this does not change from generation to generation, while professions aggregate the knowledge of past practitioners and relay it to prospective entrants via their pre-professional educational requirements.

Is intelligence analysis which like medicine requires both a practical skill set and academic preparation a craft, profession, or both?

Intelligence analysis possesses some characteristics similar to those possessed by formal professions such as specialized knowledge and academic preparation, but for most of this century national security intelligence analysis has been practiced as a craft rather than a profession. As Jeffrey Cooper notes: "Intelligence remains a "craft culture" operating within a guild and apprenticeship system in fact, self-consciously referring to "tradecraft" for example. Such a culture builds pragmatically on accreted practices that were successful in the past, lacks the strong formal epistemology of a true discipline, and is reliant on implicit

transmission of often tacit expertise and domain knowledge to novices."

When national security intelligence agencies were institutionalized after World War II, relatively few individuals practiced intelligence analysis compared to today, personnel practices were based on an apprentice model, and individual development was more ad hoc than structured. As Professor Wilhelm Agrell observes, the early period of intelligence during World War II "was followed by the "guilds," the time of the skilled craftsmen in well-fenced, closed organizations." Even today, intelligence analysts refer to "tradecraft," or the doctrine and practices used to produce intelligence analysis.

During the Cold War some aspects of professionalism crept into the intelligence analysis occupation. According to longtime CIA officer Jack Davis this was primarily due to the efforts of Sherman Kent whose legacy included an analytic code, the beginnings of an intelligence literature with the establishment of CIA's intelligence journal "Studies in Intelligence," and the creation of CIA's Center for the Study of Intelligence. In 1955, Kent also argued for the creation of a systematic intelligence literature that would address first principles and a definition of terms in order to foster the elevated debate that is necessary to advance knowledge in any field. In addition, other ef- forts to advance knowledge of the intelligence analysis occupation were established such as the creation of the Defense Intelligence College, since renamed the Joint Military Intelligence College, and the formation of the Association of Former Intelligence Officers.

Yet despite these improvements in professional practices, intelligence analysis did not become a formal profession. As Wilhelm Agrell notes, in the 1970s intelligence analysis was "a kind of semi-profession, resembling an early form of organized skills like a medieval guild. Here the secrets of the craft were transferred from master to apprentice through a process of initiation and sharing of silent knowledge. The craft was not developed but reproduced; its knowledge was static and the process cyclic."

In contrast to the legal and medical professions, even to- day intelligence analysis does not have well-defined systemic formal knowledge such as a coherent doctrine or theory, does not involve high levels of individual autonomy due to involvement of management in approving the dissemination of most finished intelligence analysis, and does not have standards that are formulated or enforced by other members of the occupation. The various efforts to improve organizational performance and advance knowledge such as those advocated by Kent remained isolated from other efforts and the knowledge gained in one area has not been applied elsewhere.

Essentially, intelligence analysis as an occupation is only marginally more professional today than it was in 1955 when Sherman Kent first articulated the need for an intelligence literature as a foundation for an intelligence profession.

While there may be good historical reasons for explaining why intelligence analysis has not developed into a formal profession, such as its relatively small personnel base and lack of external scrutiny, the failure to professionalize has led to great variation in the competence and skill of individual analysts, uncertainty regarding the very duties of intelligence analysts, and an overall diminution in the role that intelligence analysis could play in decision making.

The failure of intelligence analysis to become a formal profession has led to negative consequences for national security decision making because consumers of intelligence cannot trust the reliability of the intelligence production processes. A key factor in the quality of the finished intelligence produced is the skill and ability of the intelligence analyst, yet no official standards exist to ensure the competency of individual analysts. Unlike the legal and medical professions, intelligence analysis as practiced is unregulated, unstandardized, and lacking in all but the most rudimentary aspects of a profession.

Some intelligence producers have established more rigorous standards and development

programs than others, but in the end each agency creates its own standards for hiring and developing intelligence analysts. This inconsistency leads to widely varying analytic duties and quality of performance both within and between each intelligence-producing component. On one end of the scale, some analysts perform the role of information processor by sifting raw intelligence data for possible patterns and correlations, while on the other end of the scale senior analysts engage with national security decision makers to discuss on a high concept level the implications of various international events on US foreign policy. The lack of a single definition for intelligence analysis or a defined set of practices and procedures means that intelligence analysts do whatever it is that they are assigned to do, regardless of whether that entails lower-end tasks such as data processing or data correlation, or higher-end tasks such as expert evaluation and assessment.

In addition, with no check on analyst competence or analytic quality, intelligence consumers have no assurance that intelligence analysis is consistently reliable. They also have no assurance that the informal code of intelligence ethics-- consisting, in essence, of both independence and objectivity has been complied with. The end result is misunderstanding and mistrust by decision makers of the intelligence that is provided to them. Intelligence analysts have much to offer decision makers, but the failure to hold them account- able to formal professional standards prevents their services from being fully utilized.

Perhaps most importantly, however, the lack of a single professional focal point for the intelligence analysis occupation has led to a failure to gain cumulative knowledge and standardized application in the discipline. As a result, best practices have hit or miss application across intelligence producing agencies, and improvements in intelligence analysis process are implemented in scattershot fashion. Historically, efforts to improve the practices and management of intelligence analysis have been scattershot because they have been administered by each individual agency or department that practices intelligence analysis, and the les- sons from their implementation have been largely lost both within the implementing institution and others who might learn from its experiences.

For example, CIA's organizational reforms and improvements frequently result from task force recommendations or consultations with outside experts. However, each time a change is made in structure or process, the wheel consisting of tying existing practices to theoretical constructs of function and purpose is re-created. Once the recommendations are made and the task force or consultancy disbanded, the lessons learned regarding the conversion of theory to practice dissipate. As a result, the field of intelligence management has been for the most part ahistorical with limited and non-cumulative knowledge of how its theory should be put into practice. As the director of CIA's Center for the Study of Intelligence observed in 2023, the intelligence community does not do an adequate job recording, documenting, analyzing, or distilling lessons from its own past experiences.

In essence, intelligence analysis and its management has been practiced more as a craft dependent on the skill of its individual practitioners than a profession that aggregates knowledge and is able to improve over time by teaching accumulated best practices to incoming entrants. If these problems resulting from lack of formal practices and standardization are to be overcome, greater efforts towards for- mal professionalization may be necessary.

Intelligence analysis may have predominantly craft-based practices, but it should be possible to turn it from a craft into a profession and thereby reap the benefits that accrue to other formal professions. The skill of the individual intelligence analyst will remain the centerpiece of intelligence production, just as the skill of the physician remains at the core of medical diagnosis and treatment, but the practices that shape the creation of the intelligence analyst and the methods he or she uses can be improved through the adoption of formal personnel

practices, the standardization of best practices, and centralized knowledge accumulation efforts.

Increasing intelligence analysis professionalism through the adoption of professional practices such as a formalized selection process; training, education and development programs; performance standards; and a code of ethics would likely increase the competence of individual analysts and reliability of the analysis they produce, and this may lead to greater policymaker acceptance of the information and assessments they provide. In addition, the creation of a centralized focal point for the knowledge regarding best practices would enable intelligence analysis as an occupation to learn and improve over time as best practices are standardized throughout the intelligence community.

Unfortunately, while greater professionalism may provide a mechanism for improving the intelligence analysis occupation, other factors contribute to weaknesses in analytic competence. For example, limited resources, organizational policies that emphasize current intelligence over in-depth reports, and policymaker dissatisfaction with intelligence resulting from unrealistic expectations each lead to some diminution in the quality or utility of intelligence analysis. Nonetheless, greater professionalism can address some of these problems, and for that reason should be implemented.

One approach to professionalizing intelligence analysis might be to build an intelligence analysis profession from scratch by relying on the new Director of National Intelligence (DNI) to standardize the processes for intelligence analyst selection, hiring, training, and education across the intelligence community. The WMD Commission apparently supports this approach, for in its report it observes that "the creation of the DNI provides a unique opportunity to recon- sider implementing some elements of Community training. The benefits will be enormous: it will teach common trade- craft standards (and) standardize teaching and evaluation" particularly through the proposed National Intelligence University. However, the downside of this approach is that it would likely be evolutionary by building on programs and practices already implemented in intelligence agencies, and would not provide much opportunity for revolutionary change.

A more radical push towards intelligence analysis professionalization might entail modeling professional aspects of intelligence analysis practices on one of the existing professions such as medicine. Harvard Business School Professor David Garvin has observed that best practices can be adapted from other fields and used as catalysts for creativity in application if not necessarily replication. In terms of intelligence analysis best practices, Dr. Clemente and I have previously argued that intelligence agencies can look to the medical profession for ideas to improve the accuracy of intelligence analysis and its incorporation into policymaking. Intelligence agencies can also look to the medical profession for ideas to increase intelligence analysis professionalism.

One benefit arising from modeling intelligence analysis professionalism on medicine is that it provides a mechanism for the integration of the various analytic sub-disciplines. There are many different kinds of intelligence analysts, but this variety does not preclude greater professionalism through common personnel practices and standards. Instead, it requires a more nuanced understanding of the similarities and differences between the various analytic disciplines. The medical profession is able to find common ground and bridge differences between many different medical special- ties that have very different substantive knowledge bases by binding its different specialties together under the overall mission of improving the health of the patient. Since all intelligence analysts use similar techniques to achieve the same goal--providing information to improve decision making binding them together into a single profession should be achievable by using their common characteristics to build a core set of best practices that can be standardized across the entire intelligence community.

Yet greater professionalism does not have to require uniformity. The various intelligence analysis specialties may require different kinds of education, training, and development, but the medical profession again provides a model. The medical profession provides flexibility in the standards that apply to different medical specialties by establishing specialty boards that define the knowledge, skills and abilities required for that specialty. Where differences between intelligence analysis specialties are too great to be combined under a single common standard, intelligence analysis can follow the medical model by establishing similar boards or committees. In fact, a prototype has already been developed. In the late 1990s, CIA's Council of Intelligence Occupations defined the knowledge, skills and abilities needed for each of eleven different "occupations" or specialties related to the production of intelligence analysis. Although the standards they developed were not adopted by the organization, their research provided more nuanced understanding of the education, training and development needed for each specialty. Similar differentiations both within and between organizations that produce intelligence analysis can be used as a source for specific standards and expectations that apply to each of the various analytic disciplines.

Modeling intelligence analysis professionalization on the medical profession might also lead to the creation of professional organizations and entities that do not yet exist in the intelligence analysis context. For example, the role played by the American Bar Association in the legal profession and the American Medical Association in the medical profession has no equivalent in intelligence, yet such an association might provide a venue for knowledgeable practitioners to discuss best practices with the goal of improving both individual and institutional performance. Additional repositories or centers where knowledge regarding intelligence best practices could be stored and transmitted to the next generation of analysts might also replicate the role played by medical and law schools.

Regardless of the means chosen for implementation, turning intelligence analysis from craft-based to more formal professional practices should over time lead to greater consistency and reliability in intelligence production, and improvements in both individual and organizational performance. Intelligence agencies have endured examination after examination in the wake of multiple intelligence failures with little thought given to broader issues of professionalization. In addition to structural changes such as those recommended by the 9/11 Commission, effectively reforming the intelligence community will require changing the mind- set and practices of intelligence practitioners so that they continue to focus on improving intelligence agency performance during and after structural changes are implemented. Turning intelligence analysis into a more formal profession will go far towards changing the culture of intelligence analysts and providing the mechanism for improving the performance of the entire intelligence analysis occupation far into the future.

Fusion Centers have grown in importance and capability since the attacks on September 11th, 2001. The primary roles fusion centers provide are to exchange information and provide intelligence to other agencies at the state, local, federal and tribal entities, as well as private sector.

This research paper originally sought to determine the optimal education and training necessary for intelligence analysts at the fusion centers, however no programmed curriculum could be established due to the discovery of more fundamental questions involving the role analysts play within fusion centers.

Specifically, several unanticipated questions arose during the research: how can a fusion center or its intelligence analysts be assessed without clearly established performance standards, should fusion centers even produce finished intelligence products, and do fusion centers have the capability to produce finished intelligence?

These questions must all be answered prior to developing and implementing a structured education and training program for fusion center intelligence analysts.

To prevent acts of terrorism on American soil, we must enlist all of our intelligence, law enforcement, and homeland security capabilities. We will continue to integrate and leverage state and major urban area fusion centers that have the capability to share classified information; establish a nationwide framework for reporting suspicious activity; and implement an integrated approach to our counterterrorism information systems to ensure that the analysts, agents, and officers who protect us have access to all relevant intelligence throughout the government.

State and major urban area fusion centers grew out of the tragic events of September 11th, 2001. The events that day forever changed the demand for information and intelligence at every level of government. The fatal results of numerous failures in information sharing, whether it was systematic (lack of access to databases) or policy related (perception of need to know below the national level) required all levels of government to evaluate the current mechanisms in place in order to prevent another disaster. Officials at lower levels of government began to explore mechanisms to increase information sharing between themselves while clamoring to access available intelligence from national agencies to protect citizens from terrorist attacks. Though numerous initiatives were put forth, the primary method put in place concerned fusion centers. A fusion center is an effective and efficient mechanism to exchange information and intelligence, maximize resources, streamline operations, and improve the ability to fight crime and terrorism by analyzing data from a variety of sources.

Without the ability to analyze, fusion centers are merely organizations that have access to databases and provide connectivity. The ability to analyze means a fusion center is able to identify the threat, to connect the dots‖ and hopefully prevent another terrorist attack. In short, the ability to analyze allows a fusion center to produce intelligence, not just regurgitate other agencies‘ information.

Background

The concept of fusion centers, the consolidation of numerous agencies focused on a single problem to leverage resources, is not new and has been going on for years. The High Intensity Drug Trafficking Areas (HIDTAs) are the most cited example of these types of pre-September 11th fusion centers. However, the expansion of fusion centers arguably grew out of September 11th. After September 11th, numerous officials below the national level decided

to put a mechanism in place to prevent another attack in case of Justice‘s Global Justice, Information Sharing Initiative (Global), Fusion Center Guidelines—Developing and Sharing Information in a New Era the federal government was not able to provide sufficient warning for the state and local first responders to react.

There are three primary reasons why fusion centers at the state and major urban areas are critical for our nation: the threat of terrorism will continue, domestic threats to all levels of government are increasing and fusion centers serve as the central hub for information and intelligence exchange below the national level.

Terrorism

The threat of terrorism has not diminished since the attacks on September 11th. In fact, the number of attacks may be increasing, although the success rate may be decreasing. The Times Square Bomber and the Christmas Day Bomber are indicative of the continued threat

assaulting our nation. Fusion centers are providing, and will continue to provide, a mechanism for all interested parties to collaborate on the issue of terrorism. Terrorism will continue to be in the forefront of politicians‘ minds because terrorists are still attempting to acquire weapons of mass destruction. The Director of National Intelligence testified that Terrorism will remain at the forefront of our national security threats over the coming year. He further testified, some terror groups remain interested in acquiring CBRN (chemical, biological, radiological, nuclear) materials and threaten to use them.

We assess Al-Qaida in the Arabian Peninsula (AQAP) remains intent on conducting additional attacks targeting the Homeland . AQAP has orchestrated many attacks on the Homeland.

AQAP‘s use of a single operative using a prefabricated explosive device in their first attempted Homeland attack, and the lack of operatives associated with their second attempted attack, minimized its resource requirements and reduced visible signatures that often enable us to detect and disrupt plotting efforts.

Although the two attacks articulated in the testimony took place overseas, the potential for cells to utilize local personnel is growing. Fusion centers can be the catalyst that begins a terrorism investigation by the Federal Bureau of Investigation (FBI) by ―connecting the dots‖ with analysis of the precursor events that would not be on the federal system radar. This focus on terrorism is not limited to international terrorism, but domestic terrorism as well.

Domestic Threat

Domestic threats continue to expand in their nature and scope. The fusion centers are concerned with a broad spectrum of threats from self radicalized individuals to the aforementioned domestic terrorist groups. Fusion centers provide information and intelligence concerning these threats both laterally to other fusion centers, as well as up to the federal system and down to the towns, municipalities and tribes.

As articulated by the National Commission on Terrorist Attacks Upon the United States (the 9-11 Commission), the old way of doing business is not sufficient. The fusion centers are filling the gap between the law enforcement crime solving and the federal government‘s fixation with international terrorism from overseas. The fusion centers serve as the central hub of information and intelligence exchange between and among the various levels of government within our country.

Information and Intelligence Exchange

Fusion centers are critical for information exchange between and amongst law enforcement organizations because of their access to numerous databases, law enforcement networks, the Homeland Secure Data Network, etc. Fusion centers also serve as the focal point for receipt of intelligence from the Intelligence Community, and should also serve as the central node for intelligence analysis at the state level.

Fusion centers are the best way to effectively and efficiently leverage the available assets at every level of government to reduce the threat of terrorism and effectively reduce the spectrum of threats. Fusion centers have already received over $476,4 million from the federal government to increase their capacity and capabilities.

The fusion concept is not new; it grew out of the concept of intelligence-led policing and criminal intelligence units—their importance and visibility continue to grow since September 11th. The fusion center concept continues to evolve, and now includes a closer relationship between the Department of Homeland Security and the fusion centers.

The purpose of the study is to identify the optimal education and training methodologies and

opportunities for intelligence analysts at the state and major urban area fusion centers. The intent is to identify the best practices for the education and training of intelligence analysts to achieve the common competencies as articulated in the Global Initiative, a joint Department of Justice and Department of Homeland Security publication titled ―Common Competencies for State, Local, and Tribal Intelligence Analysts. The five core competencies identified within the publication are:
(1) thinking critically within the intelligence cycle;
(2) sharing information and collaborating;
(3) fusing intelligence and law enforcement tradecraft in a homeland security environment;
(4) communicating analytic observations and judgments or generating analytic products, and
(5) turning concepts and principles into action.

Although these outcomes may be useful to fusion centers with already established programs and policies in place, they are less than optimal for fusion centers with a less mature analytic capability. The primary shortcoming of the publication is the lack of a recommendation on how to achieve these competencies; there is no ―roadmap‖ for leaders or analysts to follow to achieve the desired outcomes. The majority of fusion center leaders are not familiar with many of the required tasks an analyst must be proficient in to attain the stated competencies. Another challenge fusion centers face regards the lack of a standardized or uniform job description for intelligence analysts across the national fusion center framework. This is a colossal problem for two reasons: (1) the lack of understanding of how fusion center leaders should utilize intelligence analysts, and (2) the expectations of intelligence analysts themselves when facing low job satisfaction based on an absence of analytic tasks, instead being relegated to the most basic job of data entry or database manipulation—a job void of analysis—as their primary duties.
Beyond the two overarching issues of core competencies and job descriptions, there exist subordinate challenges associated with the education and training of intelligence analysts at the state and major urban area fusion centers: the lack of organic assets available to educate and train the new intelligence analysts at the local/state level, access to training offered by outside agencies, and the limited amount of grants available for intelligence analyst training. Failure to address these issues seriously will result in a ―same old, same old‖ attitude at our Nation‘s expense.
Even with the myriad challenges stated above, the primary issue at the heart of the discussion concerns the lack of structured education and training for intelligence analysts at the fusion centers. This lack of structured, organized education and training prevents the fusion center analyst from attaining the desired core competencies which precludes the ability to produce original, thorough analysis. In turn, this deficiency raises questions regarding the credibility of any intelligence products sent from one fusion center to another, or to the Intelligence Community writ large.
The education and training of intelligence analysts is woefully behind the demand based on the explosion of state and major urban area fusion centers since September 11th. There are currently 72 recognized fusion centers –one in each state and twenty two major urban area centers based on the local threat vulnerability and risk assessments. Each fusion center is currently located at different places along the operational capability continuum, especially when discussing analytic capacity or the capability of the assigned intelligence analysts, the focus of this paper.
The Department of Homeland Security (DHS) is the executive agent for federal- fusion center interaction. The Office of Intelligence and Analysis (I&A) within the Department is the office with primary responsibility for fusion center interaction, including the education and training of intelligence analysts. DHS has several initiatives underway to improve the

intelligence analysis capacity in fusion centers.
In fact, DHS is focused on improving fusion center analyst capability by assigning intelligence analysts from the Office of Intelligence and Analysis to each fusion center. Within I&A, the state and local program office is the agency responsible for the hiring and assigning of the DHS representatives currently residing in the fusion centers. Currently, there are 74 intelligence analysts and nine regional intelligence supervisors who are responsible for the program within their region, with the DHS stated goal of having an intelligence analyst at each of the 72 fusion centers.
DHS also offers numerous programs, courses, and training to improve the analytic capability of fusion center intelligence analysts such as the Basic Intelligence Threat Analysis Course (BITAC), to accompany the afore mentioned human capital investment.

Research Question

The primary research question is: What are the optimal education and training opportunities necessary for intelligence analysts to achieve the Common Competencies at the state and major urban area fusion centers?
To effectively arrive at the answer to the primary research question, several secondary research questions must be answered. Several of the secondary questions are:
1. What education and training is currently offered by the Intelligence Community to new intelligence analysts?
2. What education and training is currently offered by the state and major urban area fusion centers?
3. What outreach programs are currently offered to fusion center analysts from members of the Intelligence Community?
4. What mechanisms do the fusion centers use to assess analytic competencies?
5. How do the consumers of the fusion center products view the products? (Useful, regurgitation, insightful, relevant, etc.)
6. What education and training is valued by intelligence analysts? Why?
7. What education and training is valued by the supervisors of intelligence analysts? Why?
Although this list of secondary questions appears lengthy, it is not exhaustive nor is it a survey. These types of questions were discussed during the interviews rather than administered via a survey mechanism.

Assumptions

To ensure the relevancy of this research paper and to focus its topic, several assumptions were made. These assumptions formed the basis to anticipate the continued role of fusion centers.
The first assumption is that the role of state and major urban area fusion centers will continue to grow in importance. The need for information and intelligence, one of the primary goals for fusion centers, is identified in the National Security Strategy (NSS) as a mechanism to assist the country in counterterrorism efforts.
The second assumption is both a local and a national concern, the issue of self radicalization. It is of such concern, the House of Representatives recently held hearings on the topic. The self radicalization of US Persons will continue to rise, as articulated in the National Security Strategy. This radicalization includes both radical Islamic groups and other extremist groups (white supremacists, anarchists, etc.). The rise in self- radicalization raises the importance of the fusion center‘s role because of the fusion center‘s ability to access law enforcement

databases and receive intelligence from members of the Intelligence Community.
The next assumption is that crime serves as a precursor for, or support to, terrorism. One of the primary functions of all-source fusion centers is to facilitate intelligence-led policing. This methodology may assist with identifying and interdicting criminal activities that are precursor crimes to terrorism or direct financial support, such as the Hezbollah cigarette ring in North Carolina.
Government budgets at every level will shrink over the next few years, as legislators attempt to reduce budget deficits. The potential direct result of these budget cuts is the reduction of funding for education and training, potentially for the federal technical assistance grant program managed through FEMA. Federal perspective is that states and major urban areas should develop independent funding mechanisms to support fusion center operations.
Another assumption specifically focused on education and training is the assertion that the members of the Intelligence Community (IC) have a thoroughly developed education and training infrastructure.

Definitions

Analysis

The indepth examination of the meaning and essential features of available information. Analysis highlights information gaps, strengths, weak nesses and suggests ways forward. In other words, it is the careful examination of information to discover its meaning and essential features.

Education

Gaining knowledge in preparation for application to a future situation. Education is normally associated with academic courses or programs geared to provide more conceptual or theoretical frameworks having less immediate effect on performance but laying the foundation for improved performance over the longer term.

Field Intelligence Group (FIG)

The centralized intelligence component in a Federal Bureau of Investigation (FBI) field office responsible for the management, execution, and coordination of intelligence functions within the field office region.

Fusion Center

The collaborative effort of two or more agencies that provide resources, expertise, and information to the center with the goal of maximizing the ability to detect, prevent, investigate, and respond to criminal and terrorism activity.

Fusion Process

The overarching process of managing the flow of information and intelligence across levels and sectors of government and private industry. It goes beyond establishing an information intelligence center or creating a computer network. The Fusion Process supports the implementation of risk-based, information-driven prevention, response, and consequence management programs. The Fusion Process turns information and intelligence into actionable

knowledge.

Intelligence

The simplified definition is information that undergoes analysis results in intelligence.Is the specialized form of knowledge, an activity and an organization. As knowledge, intelligence informs leaders, uniquely aiding their judgment and decision making. As an activity, it is the means by which data and information are collected, their relevance to an issue established, interpreted to determine likely outcomes and disseminated to individuals and organizations who can make use of it. An intelligence organization directs and manages these activities to create such knowledge as effectively as possible.

Intelligence Process

Is an organized process by which information is gathered, assessed, and distributed in order to fulfill the goals of the intelligence function—it is a method of performing analytic activities and placing the analysis in a useable form.

Intelligence Cycle

See intelligence process planning and direction, information gathering, processing and collation, analysis and production, dissemination and reevaluation (feedback).

Intelligence Analysts

Apply in-depth substantive expertise, all-source information, and tough-minded tradecraft to produce assessments that provide distinctive value-added to policy clients‘ efforts to protect and advance U.S. security interests.

Training

Instruction designed to aid in learning or developing a new or existing skill. Training is normally associated with internal programs intended to provide specific instruction for the implementation of job-related tasks.

Person (!!!)

A citizen of the United States; an alien lawfully admitted for permanent residence (as defined in section 1101 (a)(20) of title 8); an unincorporated association of a substantial number of members of which are citizens of the United States or aliens lawfully admitted for permanent residence; or a corporation that is incorporated in the United States, but does not include a corporation or an association which is a foreign power, as defined in subsection (a)(1), (2), or (3) of this section.

Information sharing

Is more than just connectivity or technological means. It is an act that requires human involvement and decision making.

Information

Defined as ―pieces of raw, unanalyzed data that identify persons, organizations, evidence, events or illustrates processes that indicate the incidence of a criminal event or witnesses or evidence of a criminal event.

Limitations

There are two primary limitations affecting this study, time and access. The timeline for field interviews and research was approximately six weeks. This time constraint prohibited the researcher from visiting a wide variety of members of the Intelligence Community. The researcher made an assessment of which members of the IC to visit in person based on background readings and telephonic interviews. This time constraint also limited the number of fusion centers the researcher could visit and the duration of each fusion center visit resulting in a small sample size.

The second limitation affecting the research paper was the availability of information and access to the fusion centers. Due to the required security precautions, there is limited information available to the general public concerning the operations of individual fusion centers. The researcher's access to the fusion centers was limited as a result. The natural tendency for law enforcement and intelligence organizations is to be hesitant regarding ―outside‖ people asking questions. This cultural mindset likely restricted the amount of unfiltered information some agencies provided to the researcher, especially concerning sensitive topics such as the ability, education and training of intelligence analysts.

The fusion center site visits were meant to be a representative sample and therefore may be incomplete because the researcher was not able to visit all of the fusion centers, nor all of the education and training locales of the IC.

Scope and Delimitations

The study assesses the feasibility of developing a generic education and training model applicable, yet modifiable, to the state and major urban area fusion centers. This potential model does not rigidly state the curriculum, but rather highlights elements of training and education programs across the IC and from fusion centers across the country that should be included in any intelligence analyst curriculum.

The potential implications for the Department of Homeland Security Office of Intelligence and Analysis, the DHS state and local program office, and the DHS grant program is high. The results of this research may place additional emphasis for programs within DHS.

The potential exists for this research to impact members of the IC due to the increased demand for seats at IC funded education and training opportunities across the IC training/ education community. This impact could affect the budgetary aspect of the development of the agency's organic analysts, especially the all-source intelligence analysts.

Although it appears this paper may focus on many aspects of intelligence analysts at fusion centers writ large, there are several areas the paper does not address even though the issues directly impact the intelligence analyst.

The first area this research does not address is the issue of classified information architectures. One of the most widely stated issues with fusion centers, and the information sharing environment overall, is the problems associated with the information technology architecture. There are numerous initiatives underway concerning the deployment of information and intelligence architectures, along with the associated hardware, to the state and major urban area fusion centers to address or resolve this issue. Although the lack of

access to information systems impacts intelligence analysts, this constraint does not impact the desired core competencies that fusion center analysts should possess.

The second area this research does not address is the necessity or institutional challenges of fusion center employees, especially intelligence analysts, being granted Top Secret clearances with caveat access. The security clearance controversy affects several of the challenges currently being discussed with fusion centers: the storage of classified information and the information architecture question. Again, however, whether or not fusion center analysts are granted Top Secret clearances does not impact the desired core competencies.

The final area this research will not address in detail is the feasibility or suitability of the state and major urban area fusion centers having access to raw intelligence reports or data from the IC. While access to IC data clearly impacts the effectiveness of fusion center analysts, the question of optimal training to meet core competencies is still relevant in isolation.

Significance of Study

The primary goal of this research is to facilitate, or begin, the conversation of intelligence analyst education and training among the stakeholders in the homeland security arena who are not intelligence professionals. The results of this study may encourage a dialogue regarding how fusion centers could be utilized, how true ―all source‖ analysis derived from IC data, not just law enforcement or criminal data, is possible at a higher level.

This study may also provide options to address the education and training disparity within the 72 state and major urban area fusion centers. This disparity creates perceptions of ―better than‖ when allocating resources through the federal grant process.

The potential for military intelligence officers to interact with state and major urban area fusion centers in time of crisis is high. There are numerous examples in recent history to illustrate this—Hurricane Katrina, wildfires in Texas, and potential earthquakes across the country. The recent failure of nuclear reactors because of the earthquakes in Japan highlights the sort of event where the IC, the DoD (primarily through NORTHCOM) and the fusion centers could be forced to work congruently with one another. This study may also provide the military intelligence professional an assessment of the capabilities and limitations they might expect from an intelligence analyst at the fusion centers, in times of crisis. This study will provide officers a snap shot of the capabilities and resources available to fusion centers in the event there should be a reason to collaborate, thereby allowing commanders and intelligence officers sound expectation management regarding access and capabilities.

Lastly, the research for this paper provided several fusion centers an opportunity to establish a relationship with a member of the US military outside of their state National Guard. This relationship may extend beyond the duration of this research and serve as a bridge between the military members of the IC and the analysts, supervisors and educators interviewed for this paper.

There are numerous challenges associated with the still evolving fusion center concept. This research paper will provide some insights and add to the discussion of the proper education and training fusion center intelligence analysts should receive to effectively perform their jobs.

The intelligence analyst is the hub from which everything in the fusion center flows. If the analysis of the information is incorrect, something of importance might be missed and an

event might occur. Education and training of the intelligence analysts is paramount to the success of the fusion center itself, as well as the health of the program and its value to the United States. The investment required can not be wished away or taken for granted.
This research resulted in several unanticipated questions, observations and recommendations: How to assess fusion center analytic capability, should fusion centers even produce finished intelligence, what are finished intelligence products in the fusion center context, what limitations and constraints are preventing the fusion centers from developing a robust analytic capability with their intelligence analysts?
Although the sample for this research paper was seven state designated fusion centers, a little under 10 percent of the 72 state and major urban area fusion centers currently recognized, the trends exhibited across the seven indicate some strong commonalities in terms of similar challenges with education and training, personnel management and leadership of the fusion centers.
Although each fusion center is autonomous, the lack of uniform structure or analytic requirement makes assessing the fusion centers a very difficult task. The intent of the autonomy and uniqueness is to allow the fusion centers to focus on its local issues and partners, but it prohibits the federal level from making an accurate assessment of fusion center capability for planning purposes.

Education and training are low priority activities throughout the IC(!!!)

If there is one cultural attitude that is uniform across the IC, it is a bias against allowing analysts to take time away from their jobs for training. Essentially the IC is stressing questionable short-term gains over the long-term benefits of a better-educated analytic workforce.
The purpose of this thesis is to assess the optimal education and training for an intelligence analyst working at a state or major urban area fusion center to achieve the common competencies as articulated in the Common Competencies for State, Local and Tribal Intelligence Analysts.
Literature concerning the topic of education and training of intelligence analysts did not really appear in the public domain until the mid-1990s. This new emphasis emerged from two questions: how does the United States prepare analysts for the 21st century and how does the Intelligence Community (IC) gain efficiencies from the collapse of the Soviet Union and the resulting ―peace dividend?‖ The discourse among professionals and academics has continued into the 21st century.
This literature review is broken down into two focus areas: Intelligence Analysts and Fusion Centers. The Intelligence Analyst section will look at the competencies analysts should possess, Intelligence Community guidance concerning analysts and analytic products and the differences between intelligence analysts at the national level agencies and intelligence analysts at the state and major urban area fusion centers.
The Fusion Center section will provide a historical perspective of fusion centers as well as the documents currently in place that guide the fusion centers, the baseline capabilities that fusion centers should possess and the common capabilities of intelligence analysts within the state and major urban area fusion centers.

Intelligence Analysts

To effectively discuss what education and training intelligence analysts should receive, it is imperative to ascertain what intelligence analysts do and how they do it. Al though there is no taxonomy of intelligence analysts, the targeted literature clearly indicates there are two major

subgroups of intelligence analysts—national security intelligence analysts (or national foreign intelligence analysts) and criminal intelligence analysts, with a third, emerging homeland security intelligence analyst discipline.

National security intelligence analysts typically work within the member agencies of the Intelligence Community at the national or federal level. The majority of intelligence analysts work at the Defense Intelligence Agency (DIA), the National Security Agency (NSA), the Central Intelligence Agency (CIA), the State Department's Office of Intelligence and Research (INR), and the military services.

Criminal intelligence analysts work primarily in law enforcement agencies. They are an integral part of police agencies at the state and local level, but may be incorporated into federal law enforcement agencies as well. They have traditionally focused on gangs, drugs or organized crime but after September 11th, a significant number of criminal intelligence analysts moved from their intelligence units to fusion centers at the local level. The job title of an analyst within the fusion center is intelligence analyst, not criminal intelligence analyst, which leads to differences in perceptions and understanding of capabilities.

Although the location of the analysts is different, both categories of intelligence analysts deal with the different levels of intelligence and the categories of finished intelligence. Within the Intelligence Community, there are three commonly accepted levels of intelligence: tactical, operational, and strategic. Each level places different requirements on the analyst, primarily based on the demands of the consumer at each level. These short definitions are provided for a quick refresher. Tactical intelligence refers to intelligence required for the planning and conduct of tactical operations. The next echelon is operational intelligence, which refers to intelligence required for planning and conducting campaigns and major operations to accomplish strategic objectives within theaters or operational areas. The highest level of intelligence is strategic intelligence, which refers to intelligence required for the formation of policy and military plans at national and international levels.

As stated earlier, the primary difference between the levels of intelligence is consumer driven, with the two variables being time constraints placed upon the analyst and the scope or depth of the analysis. As the world has become more connected, it has become more difficult to clearly delineate the levels of intelligence because there are instances where tactical intelligence has strategic implications and can shape national policy.

Having a good appreciation for the levels of intelligence is not by itself sufficient; the reader must also understand the different types of intelligence products.

According to the Interagency Threat Assessment and Coordination Group (ITACG), there are five categories of finished intelligence: current intelligence, estimative intelligence, warning intelligence, research, and science and technical intelligence.29 The ITACG provides this information in its Intelligence Guide for First Responders. Current intelligence addresses day-to-day events and details new developments and related background to assess their significance, warn of their near-term consequences, and signal potentially dangerous situations in the near future.

Closely connected to current intelligence is warning intelligence. Warning intelligence sounds an alarm or gives notice to policymakers, suggests urgency and implies the potential need to respond with policy action. Warning intelligence includes identifying or forecasting events that could cause the engagement of U.S. military forces or that would have a sudden and detrimental effect on U.S. foreign policy concerns such as coups, third-party wars, or refugee situations. Warning analysis involves exploring alternative futures and low probability/high impact scenarios.

While current intelligence and sometimes warning intelligence focus on the immediate issue,

estimative intelligence looks forward to assess potential developments that could affect U.S. national security by discussing the implications of a range of possible outcomes and alternative scenarios. Estimative intelligence helps policymakers think strategically about long-term threats.

The last two categories of intelligence tend to be longer in duration and tend to be more a niche capability or requirement. The first longer term intelligence is research intelligence, which consists of deeper analytical studies that support both current and estimative intelligence. The final category is scientific and technical intelligence. This type of intelligence includes an examination of the technical development, characteristics, performance, and capabilities of foreign technologies, including weapon systems or subsystems. This category covers a complete spectrum of sciences, technologies, weapon systems, and integrated operations.

The most in demand of all finished intelligence categories is current intelligence. Whether it is a politician in Washington, DC or a police chief of a major metropolitan area, policy makers and decision makers possess an almost insatiable appetite for current intelligence. Although the descriptors of the various types of intelligence may appear to be irrelevant to fusion centers because they identify threats to the nation, almost every category of finished intelligence can be directly connected to an entity at the state or local level. The governor of a state has the same executive responsibilities within the state as the president has for the nation and a good fusion center will (or should) provide the different types of finished intelligence to the relevant entity or agency.

There is another niche category of intelligence that intelligence analysts supporting law enforcement agencies, including some fusion centers, may address. It is criminal intelligence. This type of intelligence is found within the Field Intelligence Groups (FIGs) of the Federal Bureau of Investigation (FBI), the field offices of the Drug Enforcement Agency (DEA), as well as some state and major urban area fusion centers. This type of intelligence requires the analyst to also conduct criminal analysis.

The definition of criminal intelligence is the creation of an intelligence knowledge product that supports decision making in the areas of law enforcement, crime reduction and crime prevention. It is also information compiled, analyzed, and/or disseminated in an effort to anticipate, prevent, or monitor criminal activity. Criminal analysis is the application of analytical methods and products to raw data that produces intelligence within the criminal justice field.

Informed with a better understanding of the different levels of intelligence, tactical, operational and strategic, as well as the different types of intelligence products, including the niche area of criminal intelligence, the paper will now provide an overview of the education and training intelligence analysts receive.

Education and Training

One of the first articles attempting to articulate the requirements for intelligence analysts, at least in the open domain, was On Becoming An Intelligence Analyst, written by Ronald Garst and Max Gross.

Garst and Gross identify several key areas germane to the discussion of intelligence analyst education and training: the analyst must have a strong knowledge base, the analyst must have access to voluminous information, the analyst must possess analytic skills, and the analyst must have good presentation skills. Every one of these areas can be directly embedded into an education and training curriculum for new analysts.

Garst and Gross go on to mention some specific venues for education, most notably the National Defense Intelligence College (NDIC), and illustrate the value of training. Both

education and training, according to the article, are not sufficient only at the beginning but must be sustained throughout the analyst‘s career. Most of the items mentioned in the Garst and Gross article are relevant and constructive to this research topic, but they are just not thorough enough. Where and how do we educate and train our intelligence analysts? What are the core competencies an intelligence analyst should attain? These questions are left unanswered. The best place to begin to address these questions is with the assessment of the core competencies in the national security analysts‘ arena. This is discussed and articulated by David Moore and Lisa Krizan in their paper titled Core Competencies for Intelligence Analysts at the NSA. This paper specifically refers to the National Security Agency (NSA) because both of the authors were employees of the NSA when they wrote the piece, however, the core competencies for intelligence analysts they refer to are applicable across the Intelligence Community.The premise behind the Moore and Krizan paper is there are certain Knowledge, Skills, and Abilities (KSAs), as well as Characteristics, which are conducive to analytic work, and which should be sought out during the hiring process as well as refined during the analyst‘s career.

There are numerous elements within this pyramid model that are directly relevant to the central theme of this paper. The three areas this paper will highlight are Knowledge, Skills, and Abilities.

Knowledge

Moore and Krizan identify five knowledge areas critical for intelligence analysts, at least at the NSA. The areas are target knowledge, Intelligence Community, government plans and policy, customer needs and analytic resources. These knowledge areas would have to be incorporated into the education and training programs but many items would have to be specially tailored for the individual analyst because of the uniqueness of the portfolios, who the customers are, what governmental policies affect the portfolio, etc. The knowledge aspect is necessary but potentially very difficult to incorporate into a large scale education and training program.

Skills

Moore and Krizan identify eight skills that are critical for intelligence analysts:
critical thinking, literacy, computer literacy, expression, foreign language proficiency, research, information gathering and manipulation and project/process management. Obviously not all of these attributes are necessary for inclusion into a entry level education and training program, but the majority are, especially critical thinking, expression, research and information gathering and manipulation. Most of the other skills identified should be sought during the interview and hiring process based on the position specific skill requirements. Formal training on the methodologies of critical thinking should most definitely be incorporated into an educational curriculum, as well as methodologies of how to conduct research, software for data manipulation and methodologies for analysis and synthesis.

Abilities

The final area addressed by Moore and Krizan is the abilities arena. They identify three main abilities: communicating, teaming and collaborating and thinking. The communicating aspects most definitely would be included into any new intelligence analyst training program

to ingrain the corporate mindset into the analyst. The inclusion of active listening theories and practical exercises along with mandatory communicating requirements (e.g., briefings) would increase the analysts‘ communication ability. The education and training program should also include methodologies on structured thinking, as well as the theories behind it. The inclusion of coursework on the different reasoning approaches and incorporation in other KSA learning areas would be synergistic. The teaming and collaboration aspect would be more appropriate to on the job training and assimilation rather than a structured learning environment.

David Moore takes this pyramid model with its Characteristics, Skills, Knowledge and Abilities and further refines it in his article ―Species of Competencies for Intelligence Analysts.‖ Moore refines the requirements of analysts at different levels of analysis. He defines the four levels of intelligence analysis as descriptive, explanatory, interpretive, and estimative.

Descriptive analysis is a process that reports an event, person, place, or thing. Descriptive intelligence is a reactive, event-driven process closely linked to a particular information source. Based on measurable facts, or the characteristics of facts, it reports evidence by describing specific events or characteristics.

Explanatory analysis reveals why something is so. Explanatory intelligence is the result of a rationalized analytic process that employs methods of reasoning to reveal contexts for facts and inferences, including observations about patterns or changes in observed behavior. Analysts performing this type of analysis draw on catalogued best analytic practices in a collaborative environment that reduces or minimizes redundant efforts. Well-developed communicating, thinking, and collaborative abilities as well as knowledge of who plays with whom in the Intelligence Community enhances this collaboration.

Interpretive intelligence analysis is an adaptive process that uses both structured methods of analysis and analysts‘ intuition to interpret information. Analysts apply structured methods such as evidentiary inference, analysis of competing hypotheses, and scenario development. They employ techniques such as opportunity analysis, linchpin analysis, and matrix analysis to make sense out of events and their associated evidence.

Estimative analysis is a proactive process that predicts based on analysts‘ experience, knowledge, and modeling of evidence.39 The anticipatory products created from this type of analysis are the results of applying such methods as Bayesian analysis, evidentiary inference, trend analysis, and various forms of systems analysis.

According to Moore, these different levels of analysis and associated skills illustrate the natural progression of an analyst‘s ability to undertake more complex analysis. These types of analysis, and his associated characteristic charts, can provide the manager or supervisor of intelligence analysts a good starting point to better maximize the intelligence analyst‘s skill set as well as remaining cognizant of limitations when assigning tasks.

Intelligence Community Directives

The potential for a difference of opinion between supervisors and agencies as to what constitutes ―good analysis‖ at different levels is problematic. To alleviate some of these challenges, the Intelligence Community is beginning to accept universal standards in many areas. This standardization began in earnest with the creation of the Director of National Intelligence (DNI) in 2004.

The Office of the Director of National Intelligence (ODNI) has published several Intelligence Community Directives (ICDs) to bring the seventeen members of the Intelligence Community to a universal lexicon on a broad range of topics. There are two ICDs that directly address the topic of education and training of intelligence analysts: ICD 203,

Analytic Standards, and ICD 610, Competency Directories for the Intelligence Community Workforce.

ICD 203 states the analytic standards are: objectivity, independent of political considerations, timeliness, based on all available sources of intelligence, and exhibits proper standards of analytic tradecraft. Objectivity requires that analysts and managers perform their analytic and informational functions from an unbiased perspective, which ties in with the second standard of independent of political considerations. This standard states analysts and managers should provide objective assessments informed by available information that are not distorted or altered with the intent of supporting or advocating a particular policy, particular viewpoint or audience.

Analytic products that arrive too late to support the work of consumers weaken utility and impact. According to ICD 203, analysts will strive to deliver their products in time for them to be actionable by customers, in other words analysts must adhere to the timeliness standard.

The fourth standard put forth in ICD 203 is intelligence should be based upon all available sources of data. This means analysis should be informed by all relevant information available to the analytic element. This standard prevents analysts from merely selecting intelligence that supports their hypothesis, without considering all of the intelligence available.

The last standard articulated in ICD 203 is exhibiting proper standards of analytic tradecraft, specifically:

1. **Properly describes the quality and reliability of underlying sources**
2. **Properly caveats and expresses uncertainties or confidence in analytic judgments**
3. **Properly distinguishes between underlying intelligence and analysts assumptions and judgments**
4. **Incorporate alternative analysis where appropriate.**
5. **Demonstrates relevance to U.S. national security.**
6. **Uses logical argumentation.**
7. **Exhibits consistency of analysis over time.**
8. **Makes accurate judgments and assessments.**

Although these analytic standards were recently codified, they are not new to the Intelligence Community.

The ODNI also attempted to codify the competencies intelligence analysts should possess. ICD 610 created a taxonomy to ensure universal understanding of key descriptors and definitions across the Intelligence Community. ICD 610 further distilled the competencies based on pay grade, non-supervisor vs supervisor, and senior officer. The two broad categories of the taxonomy are core competencies and technical expertise, with the technical expertise further delineated as professional tradecraft and subject matter expertise.

Here are the key definitions of the Intelligence Community taxonomy that are applicable to the topic of education and training of intelligence analysts. Competencies are the measurable or observable knowledge, skills, abilities, behaviors, and other characteristics needed to perform a type of work or function. There are numerous competencies that are considered core competencies, and that apply universally to all Intelligence Community employees regardless of agency or element, mission category, occupational group, or work category. Within the Intelligence Community there are two additional competency areas, the first area is professional tradecraft. Professional tradecraft consists of competencies required for employees in one or more occupations within a particular mission category. These competencies can extend beyond a certain agency or entity. The second Intelligence Community specific area is subject matter expertise or specialty. These types of competencies are required for employees in one or more occupations within a mission category, depending

on a particular specialty or assignment. These competencies include substantive knowledge areas, such as intelligence topics and target countries, certifications, and intelligence disciplines (e.g., GEOINT, HUMINT, and SIGINT).
This taxonomy is directly relevant to the discussion of intelligence analyst education and training because it articulates the performance outcomes for intelligence analysts. These attributes, skills, and characteristics are how supervisors will be assessing the intelligence analysts in the Intelligence Community. These are the baseline capabilities the Director of National Intelligence wants all intelligence analysts within the Intelligence Community to maintain. There are several of the critical competencies identified in the Moore and Krizan article highlighted in the ICD taxonomy, most notably researching, tools and methods as well as critical thinking.

Critical Thinking and Reasoning

According to the ODNI, the core competencies listed in figure 3 should be adopted by every intelligence analyst, regardless of work place, national agency or fusion
center. Almost every document concerning intelligence analyst education or analysis states the need for critical thinking. The founders of the website Criticalthinking.org believe critical thinking is that mode of thinking— about any subject, content, or problem—in which the thinker improves the quality of his or her thinking by skillfully analyzing, assessing, and reconstructing it.
This self awareness and critical thinking is crucial for another important trait of intelligence analysts, the ability to reason. There are three types of reasoning: inductive, deductive and abductive reasoning. Inductive reasoning is the type of logic moving from the specific to the general. While this method provides many possible outcomes, however, inductive reasoning lacks a means to distinguish among each outcome–all are possible. An analyst has no way of knowing whether an inductively determined solution is correct.
Deductive reasoning is the opposite of inductive. It is moving from the general to the specific, which is what most people refer to as logic. It addresses questions about adversarial behavior and intentions. Deductive reasoning becomes essential for warning intelligence production because based on past perceptions (or actions), certain facts may indicate specific outcomes.
The third type of reasoning is abductive reasoning. It reveals plausible outcomes to the intelligence analyst, primarily through pattern recognition. When an adversary‘s actions defy accurate interpretation through existing paradigms, abductive reasoning generates novel means of explanation. In the case of intelligence warning, an abductive process presents policy–making intelligence consumers with an assessment of probabilities. Although abduction provides no guarantee that the analyst has chosen the correct hypothesis, the probative force of the accompanying argument indicates that the most likely hypothesis is known and that elusive, actionable intelligence is on tap.
These different types of reasoning allow the intelligence analyst to successfully accomplish his job. The need for intelligence analysts to be exposed to and understand the different types of reasoning is vital for the intelligence analyst to successfully integrate various structured methodologies.

Analytic Tradecraft

Another significant area the literature emphasizes is the need for analytic tradecraft. It is also mentioned in both ICD 203. Although mentioned as important, there is very little literature dedicated to the study of analytic tradecraft and its value. The majority of analytic tradecraft can be characterized as structured analytic methodologies. There are numerous examples of

these methodologies in the literature but the most common are: Red Teaming, Team A/Team B, Alternate Competing Hypotheses, and Key Assumptions Check.
Structured analytic techniques are incorporated into every education and training program for intelligence analysts. Each program dedicates a different amount of time to the topic of analytic tradecraft. Structured analytic techniques are important for the intelligence analyst to overcome cognitive bias and deliver intelligence products to the consumer that comply with the analytic standards framework. These techniques must be included in the education of new intelligence analysts.

Fusion Center Overview

The second area of emphasis of this literature review is to ascertain what fusion centers do and how they do it. Fusion centers have grown considerably since September 11th. There are currently 72 state and major urban area fusion centers across the country. Originally fusion centers were a local and state initiative until the Department of Homeland Security saw the utility of using fusion centers as a mechanism to share and distribute information to state, local, tribal and private sector stakeholders.
The fusion center concept is not new. Fusion centers grew out of the regional center model with very specific mandates. The High Intensity Drug Trafficking Areas (HIDTAs), sponsored by the DEA, are the most cited example of a pre-September 11th center. Many state, local and regional leaders saw the fusion centers as a mechanism to fill the void of the ―correct information and intelligence‖ from the federal government to potentially prevent a future attack or respond effectively to one.
As the concept of the fusion centers evolved and matured, documents from the President and federal agencies began to be developed and published. The first document to specifically target fusion centers was the Fusion Center Guidelines published in July, 2005.

Fusion Center Guidelines

This textwork was prepared with funding from the Bureau of Justice Assistance (BJA) in collaboration with the Global Justice Information Sharing Initiative, U.S. Department of Justice, along with the Department of Homeland Security. The guidelines attempt to cover the entire range of issues a fusion center might face, from governance to civil liberties. This document serves as the foundational document for fusion center guidance. There are eighteen specific guidelines mentioned in the document. Of those eighteen, there are three recommendations with direct application to this research paper. The three are: Guideline 1–The National Criminal Intelligence Sharing Plan and the Intelligence and Fusion Process, Guideline 12–Training of Center Personnel, and Guideline 14–Intelligence Services and Products.
Guideline 1 states the fusion center should adhere to the tenets of the National Criminal Intelligence Sharing Plan (NCISP) and perform all steps of the intelligence and fusion process. The intelligence analyst is intimately involved with all the steps of the intelligence cycle and should therefore, be well trained in its utilization.
The training aspect of the first guideline ties nicely with Guideline 12, which states fusion center personnel should adhere to the training objectives in the NCISP and meet the minimum Criminal Intelligence Training Standards for U.S. Law Enforcement and Other Criminal Justice Agencies. This is one of the first mentions of training requirements but is more of a recommendation versus directive with the use of the word should instead of must.
Guideline 14 deals specifically with the variety of intelligence services fusion centers should provide and produce. The fusion centers should produce strategic and tactical products to

support the mission and priorities of the center and consult with the Law Enforcement Analytic Standards to ensure the development of professional quality analytic products. These guidelines form the baseline for what an intelligence analyst should do within the fusion center, from being an integral member of the fusion center process to producing analytic products.

Baseline Capabilities

The Baseline Capabilities for State and Major Urban Area Fusion Centers was the first supplement to the Fusion Center Guidelines. It attempts to refine the outcomes of the fusion center guidelines in order to establish the baseline capabilities and the operational standards necessary to achieve each one.

The baseline capabilities document is broken down into two sections: Section I: Fusion Center Capability Areas: Fusion Center Process Capabilities and Section II: Fusion Center Capability Areas: Management and Administrative Capabilities.

The Fusion Center Process Capabilities are actually an expansion and refinement of the steps within the intelligence process and its applicability for the fusion center. Almost every subsection impacts intelligence analysts, but there are two subsections with the greatest impact concerning the education and training of intelligence analysts, section C, Processing and Collation of Information, and section D, Intelligence and Analysis.

Section C, Processing and Collation of Information, articulates two subordinate steps to ensure the accurate processing and collation of information. The processing aspect directly impacts the training requirements for intelligence analysts as the Baseline document references both the International Association of Law Enforcement Intelligence Analysts and the Law Enforcement Analytic Standard as well as encouraging the utilization of tools. Both of these items require incorporation into a training program. The collation aspect references 28 CFR 23 as a requirement which must also be included into a training program along with confidence levels of sources which requires an educational base to accurately assess the sources.

Section D, Intelligence and Analysis, specifically states eight subordinate steps. Two of the steps would affect a training program, the analytic products plan and the analytic tool development. Both of these items are skill based, repetitive tasks so a training vice education program would be appropriate. Four of the eight steps would impact the development of an educational program. These focus on the ―tools for the brain‖ aspect, analysis (both open and restricted access), terrorist linkage with crime patterns, and strategic analytic services. One of the sections, analyst specialization, would require both education and training to allow the analyst to become proficient in the assigned portfolio.

During the National Fusion Center Conference in 2009, the membership distilled the Baseline Capabilities document into four Critical Operational Capabilities (COC). The four COC‘s are Receive, Analyze, Disseminate and Gather. Receive is the ability to receive classified and unclassified information from federal partners. Analyze is the ability to assess the local implications of threat information through a formal risk assessment process. Disseminate is the ability to further disseminate threat information to other state, local, tribal and territorial and private sector entities. Gather is the ability to gather locally generated information, aggregate it, analyze it, and share it with federal partners as appropriate.

These four Critical Operational Capabilities are more accurately a synthesis of the intelligence cycle or process. The intelligence process, according to the Baseline Capabilities document, is comprised of the following six steps: Planning and Direction, Collection, Processing/Collation, Analysis, Dissemination and Reevaluation. The chart below cross references the Critical Operational Capabilities with the different steps of the intelligence process.

Operational Capability (COC) Gap Mitigation Guidebook to improve the identified

shortcomings and develop a plan to improve the capabilities over the coming years.
This document is a joint Department of Justice and Department of Homeland Security effort designed to highlight competencies analysts should strive for and managers should demand in order to facilitate the development of intelligence analysts, not criminal analysts, within the state and major urban area fusion centers. The document also provides a cross-walk to other types of analysts, especially the different words used to describe the same competency in the different communities.
The five common competencies addressed are: thinking critically within the intelligence cycle, sharing information and collaborating, fusing intelligence and law enforcement tradecraft in a homeland security environment, communicating analytic observations and judgments or generating analytic products, and turning concepts and principles into action.
The document does not provide a definition of these competencies, but rather provides a visual aid with the competency on the left and analytic skill behavior indicators on the right. Below are selected summaries of each competency.

Thinking critically within the intelligence cycle

Several of the more significant displayed attributes are the ability to frame critical issues and difficult questions, design analytic approaches, systematically challenge key assumptions, overcome mental mind-sets, avoid common fallacies and evaluate the quality of thinking and analytic process through comparisons with established standards. This ability to think critically is a critical skill of an intelligence analyst.

Sharing information and collaborating

A few of the more important attributes indicated in the document are the ability to establish trusted networks for collaboration, apply legal, privacy and security guidelines to the collection and storage of data, operationalize the ODNI‘s responsibility to provide‖ within applicable laws and regulations, collaborate across organizational and functional boundaries and de conflict analytic positions.
The Common Competencies document subdivides this competency into three subcategories. The Methods, Techniques and Tools section includes analysis such as crime and demographic analysis, the utilization of structured analytic techniques like hypothesis generation and decision support techniques while leveraging various tools such as flow charts and link analysis tools.
The second subcategory is titled Threat and Risk Assessments and focuses on the analyst‘s ability to produce threat and vulnerability assessments, communicating risk as well as anticipating the risk and threat and offering recommendations to mitigate the identified risks.
The final subcategory is Suspicious Activity Reports (SARs). SARs are a homeland security specific raw reporting mechanism being incorporated across the fusion center structure and into the law enforcement arena. The intelligence analyst must be able to exploit SARs utilizing analytic techniques to identify trends and patterns while assessing and disseminating the SARs in accordance with the information sharing environment.

Communicating analytic observations and judgments

The communicating category focuses on the analyst‘s ability to transform customer needs into intelligence requirements, proposing the product type to meet the demand, writing the product with collaboration and coordination, marking the product for appropriate distribution and delivering the product to the consumer, either via briefings or a stand alone written

product.

Turning concepts and principles into action

The turning concepts aspect of the intelligence analyst competency focuses on the subject matter expertise or portfolio requirements of the analyst. The analyst should be able to analyze and identify items within their portfolio, its nexus with terrorism or homeland security, assess the legal, privacy, civil rights and regulatory implications of the information and how to proceed. The analyst should share best practices with the community and assess analytic products against established standards.
These common competencies align with the core competencies addressed in section one of the literature review. Each emphasis area has specific education and training requirements the supervisors and leadership within the fusion centers must address.

Additional training

Beyond the common competencies listed in this document, there are other training requirements intelligence analysts at the fusion center require that the national level analysts do not. The two biggest requirements are a grounded knowledge of intelligence- led policing and certified training and knowledge of 28 CFR 23.
Intelligence-led policing is the collection and analysis of information to produce an intelligence end product, designed to inform police decision making at both the tactical and strategic levels. Since this paper is not law enforcement focused, there will be no further discussion of intelligence-led policing herein.
The 28 CFR 23 is a Code of Federal Regulations that ensures criminal intelligence systems are utilized in conformance with the privacy and constitutional rights of individuals. It is a guideline for law enforcement agencies. It contains implementing standards for operating federally funded, multijurisdictional criminal intelligence systems. In essence, this regulation requires everyone who inputs data into the record management system to be trained on the requirements and restrictions of what is allowed and forbidden from being collected and retained on individuals.
These two training and education requirements are viewed as paramount from the fusion center leadership in the education and training curriculum for newly hired intelligence analysts at fusion centers, primarily due to the onus placed on the fusion centers concerning information systems for access and funding.
These guiding documents from the federal government provide the fusion centers a strong base to build from while establishing a framework for fusion centers across the country which are standardized yet customizable for the state and major urban area mission requirements.

The literature on the education and training of intelligence analysts is rather sparse, with no academic discussions of the unique requirements for intelligence analysts at the state and major urban area fusion centers. This research paper hopes to provide the bridge between the current literature and the emerging requirements of the fusion centers.
Intelligence analysts are the critical elements within the state and major urban area fusion centers; they must be properly educated and trained to provide the United States the first line of defense for our homeland security.
To briefly readdress the focus of the paper, the purpose of this thesis is to describe the optimal education and training a new intelligence analyst should receive when hired to work in a state

or major urban area fusion center.

There are two main research methodologies: qualitative and quantitative

Quantitative research is focused on numerical interpretation and analysis of the data, regardless of how it is collected or coded. The potential for quantitative research into the education and training of intelligence analysts exists. There are many areas where a survey would be useful to quantify the amount or type of training an analyst receives. However, this research paper will not administer any surveys or provide any statistical analysis or results. This research paper will exclusively utilize qualitative methodology. The central characteristic of qualitative research is that individuals construct reality in interaction with their social worlds. Every person is shaped by their experiences and those experiences affect how the individual views every interaction or experience after it. There are numerous life experiences that significantly influence how people view reality. One of the primary experiences is education.

According to Sharan Merriam, there are six standard approaches to qualitative research: phenomenology, grounded theory, ethnography, narrative analysis, critical qualitative research and basic qualitative research. To better understand the methodology selected, a brief summary of each type of approach is provided with an emphasis as to why the approach was, or was not, selected.

Phenomenology is basically the experiences one has. It is not the observations of the experiences, but rather the feelings of the individual while doing or living through the experience. Although the researcher has been through a single iteration of intelligence training from the military, it was not feasible for the researcher to experience all aspects of fusion center analytic training for this paper.

Grounded theory is an inductive methodology, meaning it goes from the specific to the general, to find an explanation of the phenomenon. Further, this approach describes the generation of theory from systematic research. It is a set of rigorous research procedures leading to the emergence of conceptual categories. For this project, the theory explaining education and training cultures is already established so there is no need to develop or discover one.

Narrative analysis refers to the approach in which the data collected is from stories or narratives provided by the interviewees. The information is then analyzed for the meaning it has for its author (the interviewee). Although numerous interviewees for this research paper conveyed stories during the course of the interviews, the outcome will not be individually focused or analyzed. The interviews will be synthesized and analyzed looking for trends across the fusion centers rather than analyzing individual experiences.

Critical qualitative research is designed to critique and challenge, to transform and empower.72 The technique ―seeks not just to study and understand society, but rather to critique and change society.‖73 The intent of this research was not to change but rather to have the participants and interested parties discuss the findings of this research project to improve the fusion center concept.

Basic qualitative research intends to understand the meaning a phenomenon has for those involved.74 The intent for this research paper was to gather what those involved with intelligence analysts believe to be the best education and training, from their perspective as an analyst, supervisor or consumer. This paper will utilize the basic qualitative research methodology.

Constructivism underlies basic qualitative studies. The individuals interviewed for this paper construct their reality based on their interaction with their social world, whether it is at their present job, their social network, their educational opportunities or other previous experiences. As stated earlier, their experiences shape the way they view future experiences. To acquire a broader perspective of the education and training of intelligence analysts over all, the research included interviews and conversations with several members of the Intelligence Community in order to gain insight into the education and training the Intelligence Community affords and requires of its newly hired analysts. The research also included conversations and interviews with experts on intelligence matters as well as fusion center personnel.

To reiterate, the primary research question was: what is the optimal education and training that intelligence analysts at state and major urban area fusion centers should receive? To effectively ascertain the answer to the primary question, several secondary questions were posed to assist in the data collection through oral history interviews.
The secondary questions for this research question were: What education and training is provided to intelligence analysts in the Intelligence Community? What education and training is currently offered by the state and major urban area fusion centers? What outreach programs are currently offered to fusion center analysts from members of the Intelligence Community? What mechanisms do the fusion centers use to assess competencies? How do the consumers of the fusion center products view the products? What education and training is valued by the intelligence analysts and why? What education and training is valued by the supervisors of intelligence analysts and why?

Al though it is theoretically possible for an individual or organization to interview every intelligence analyst at every fusion center, that approach was not practical for this research paper. To overcome the inability to interview every intelligence analyst at every fusion center, the research methodology incorporated sampling instead. The purpose of a sample is to gain insight to explain a phenomenon without assessing or engaging the entire population.
There are two main types of sampling methodologies: probability sampling and non-probability sampling. Probability sampling is any process which ensures a random process, meaning every element in the group has an equal probability of selection. This methodology was not viable for this research paper for two primary reasons: the researcher did not have access to a database of every intelligence analyst currently operating in state or major urban area fusion centers from which to select a random sample and it would not provide insight into where the individual fusion centers are along the operational continuum of capabilities. Based on the researcher‘s requirement to interview personnel in fusion centers along numerous places on the operational continuum, the non-probability sampling method was utilized. More specifically, this paper utilized purposeful sampling to ensure the interviewees were directly involved with the research topic of intelligence analysts. The three samples selected for the research were fusion centers, the Intelligence Community and intelligence subject matter experts.
The first sample group selection was the fusion centers. The researcher selected fusion centers based on their various stages of development, different regions of the country, different state/local/regional threats, varying local concerns, and willingness to engage with the researcher. The researcher interviewed and visited the current and previous ―Fusion Center of the Year‖ recipients, an award presented by the Department of Homeland Security to the ―best‖ fusion center for the previous calendar year.

The methodology further divided the sample into three additional subgroups: intelligence analysts, supervisors, and education and training personnel. The theme of these interviews focused on the education, training and professional development of the intelligence analysts. The interviews and conversations attempted to tease out the interviewees‘ perception of education and training, thoughts and opinions on the federal IC education and training opportunities, relationships between federal agencies and the fusion center, perception of initiatives from the federal agencies, assessment in relation to the core competencies guidelines, how assessments are made concerning intelligence products and overall job satisfaction.

Based on the particular subgroup being interviewed, certain secondary questions were asked throughout the interview. Examples of the questions are: What education and training is currently offered by the state and major urban area fusion centers? What outreach programs are currently offered to fusion center analysts? What education and training is valued by the intelligence analysts and why? What education and training is valued by the supervisors of intelligence analysts and why?

The second sample of interviewees selected was from the Intelligence Community. The researcher spoke and met with representatives of the IC directly involved with the education and training of intelligence analysts. The researcher met with the Central Intelligence Agency (CIA), Defense Intelligence Agency (DIA), State Department‘s Bureau of Intelligence and Research (INR), Department of Homeland Security (DHS), Drug Enforcement Agency (DEA), Army, Marine Corps and the Coast Guard.

The theme of the questions directed toward the Intelligence Community education and training personnel was intended to gain insight in many areas: what education and training the members of the IC are providing to their new analysts, how the agency training programs incorporate the requirements of Analysis 101 (the Office of the Director of National Intelligence‘s attempt to conduct ―joint‖ intelligence analyst training), how many members have attended the Analysis 101 course, perception of the fusion centers‘ analytic capability, opinion of the fusion center education and training programs, collaboration with fusion centers, and incorporation of Intelligence Community Directive (ICD) 203, Analytic Standards, and their perception of ICD 610, Core Competencies for the Intelligence Community workforce.

There were numerous secondary questions specifically directed towards this sample. Examples of the guiding questions were: What education and training is currently offered by the Intelligence Community to new intelligence analysts? What outreach programs are currently offered to fusion center analysts from members of the Intelligence Community? What education and training is valued by the intelligence analysts and why? What education and training is valued by the supervisors of intelligence analysts and why?

The third sample group was selected based on their expertise involving intelligence. This group is the subject matter experts including retired intelligence analysts, intelligence scholars and educators. The objective of the subject matter expert group questions was to gather a broad, non agency perspective on the education and training requirements for intelligence analysts, how policy makers viewed and incorporated intelligence and what analysis meant. Examples of the secondary questions are: What education and training do you believe is best and why? How do consumers of intelligence products assess utility? What mechanisms do the fusion centers use to assess competencies? How do the consumers of the fusion center products view the products?

The outcomes of these samples should be representative, but the potential exists for them to not be. The primary reason this sample could be skewed is individual bias of any

given interviewee. This bias may come from a perception of loyalty (lack of willingness to talk candidly about the organization or its capabilities) or lack of experience (the interviewee may not know anything different, meaning this may be the interviewee's only job). The researcher will maintain awareness of any potential outliers as the data is collected and analyzed.

This chapter provides context as to the available methods of research, qualitative and quantitative, and why the qualitative methodology was selected. It also provided the reader a brief overview of the different methodologies associated with qualitative research and the decision to use basic qualitative research design for the research project.
This chapter provided an explanation as to the sampling method and the desired outcomes from each sample group and the associated subgroups, including a few representative questions, along with the potential concern of individual bias affecting the data collection.
The next chapter will provide the results and analysis of this research design.

This chapter is broken into two primary sections.

The first section will discuss the unanticipated questions that arose during the course of research. This section addresses those questions of how, should and can. The first unanticipated question was how can someone assess an entity, and in this case recommend education and training, without an established standard.
The second question that arose was should fusion centers even produce finished intelligence products. The final question posed was can fusion centers produce finished intelligence. The first section will address these questions and provide some perspective.
The second section will detail the observations made during the fusion center site visits and interviews. Based on the seven site visits to a geographically diverse set of fusion centers, along with numerous interviews, three broad themes emerged concerning the education and training of intelligence analysts at state and major urban area fusion centers, and by extension the ability of intelligence analysts to produce intelligence. Broadly categorized, the three themes were education and training challenges, personnel issues and leadership aspects.
To effectively set the stage for the discussion of these topics, a brief snapshot of some actual fusion centers provides some context rather than an abstract theoretical discussion. There is an adage that says, when you've seen one fusion center, you've seen one fusion center. The uniqueness of fusion centers is displayed in both the physical layout of the facility and the missions of the facilities. These differences create challenges for researchers when assessing and comparing the fusion centers because there is no standard for the different communication, operation or intelligence functions within the fusion centers. For example, the New Jersey Regional Operations and Intelligence Center has its analysis unit separated between the crime section and the threat section. This separation is typical in fusion centers where both criminal and intelligence analysts are present and was observed in several of the fusion centers. On the other end of the spectrum, the Connecticut Fusion Center does not even have criminal analysts in the center because the decision was made to separate the two missions completely.
Conceptually, the autonomy and uniqueness of each fusion center makes sense because it allows the leadership of the centers to organize based on the problems and organizational construct of the participating agencies. Compare for example, the mission statements below for two state fusion centers.
The mission of the Colorado Information Analysis Center (CIAC) is to provide an integrated,

multi-disciplined, information sharing network to collect, analyze, and disseminate information to stakeholders in a timely manner in order to protect the citizens and the critical infrastructure of Colorado.

The mission of the Arizona Counter Terrorism Information Center (ACTIC) is to protect the citizens and critical infrastructures of Arizona by enhancing and coordinating counter terrorism intelligence and other investigative support efforts among local, state and federal law enforcement agencies.

The CIAC does not even mention intelligence in its mission statement, although it does say it will analyze, while the ACTIC mentions intelligence but does not articulate its ability to pass information. A more thorough analysis of the actual missions of each fusion center, as perceived by the fusion center leadership and governing body is necessary to correctly ascertain what the true mission of each fusion center is. The mission drives the functions and outputs of each organization; whether they view themselves as a law enforcement support agency or an analysis entity.

The challenge, therefore, may not be the concept of fusion centers, but what the federal government is asking them to do- be an information conduit or conduct intelligence analysis. Historically criminal intelligence units, the precursors to fusion centers, primarily focused on criminal analysis and case support for prosecution. The anticipatory, generalized analysis currently in demand was not a staple of the previous model of fusion centers. Federal leadership wants the fusion centers to connect the dots by sifting through the reams of paper and terabytes of data at their disposal. Regardless of how the fusion center views its mission, it is supposed to be focused on two broad areas: information sharing and intelligence.

One of the focuses of fusion centers has been information sharing, but the concept of fusion goes beyond information repositories. Dr. Dave McIntyre, a homeland security expert who has researched and taught homeland security since the mid-1990s, has stated that fusion centers without analysis are just digital libraries and the information sharing environment creates interlibrary loan‖ where the fusion center can access other databases. The current role the majority of fusion center intelligence analyst‘s play is that of a reference librarian, meaning they know where and how to get the information but not what it means. They can not provide an informed so what.

Fusion centers have shifted from an anti-terrorism or counter-terrorism focus to a more broad all crimes, all hazards‖ approach. As with any management model, there are tradeoffs with this decision. Thankfully, there is not enough terrorism to keep all of the fusion centers engaged with the terrorism mission. This can result, however, in unengaged and underprepared analysts. The tradeoff for broadening the focus to the all crimes, all hazards approach may be that the focus of the fusion center is becoming too crime centric—meaning the focus is back on case support and request for information (RFI) response to officers and away from the four Critical Operational Capabilities (COC‘s) of the fusion centers–Receive, Analyze, Gather, Disseminate.

Explanation of Research Question

The research question for this paper was: What are the optimal education and training opportunities for intelligence analysts at the state and major urban area fusion centers to attain the competencies as outlined in the Common Competencies for State, Local and Tribal Intelligence Analysts document?

To refresh the reader, the working definition of education is gaining knowledge in preparation for application to a future situation. All persons defines education as normally associated with academic courses or programs geared to provide more conceptual or theoretical frameworks having less immediate effect on performance but laying the foundation for improved performance over the longer term.

The definition of training is instruction designed to aid in learning or developing a new or

existing skill. They defines training as associated with internal programs intended to provide specific instruction for the implementation of job-related tasks.
Although the original question concerned the optimal education and training for fusion center intelligence analysts, several other, more fundamental questions began to appear during the course of research.

When this research project began the researcher felt one of the primary purposes of the state and major urban area fusion centers was to produce intelligence. Every entity that is identified and labeled as an intelligence facility, produces intelligence, it does not merely serve as a conduit for information. The researcher also anticipated the site visits would provide insight as to how the fusion centers assessed both their intelligence and their analysts, similar to the Intelligence Community. Both of these assertions were questioned by many experts and members of the Intelligence Community. The three unanticipated questions were: how do you assess a program with no established standards, should fusion centers even produce intelligence, and can fusion centers produce finished intelligence products lack of Established Standards
.The first unexpected question that arose during the research was, how can an optimal education and training program be developed if there is no established standard for what an intelligence analyst should do within a fusion center? Although there are common competencies, the job description of the majority of the intelligence analysts is more closely aligned to criminal analysis or case support rather than intelligence analysis. All fusion centers have intelligence analysts; however, not all of the fusion centers utilize the analysts in the same manner or for the same outputs. This disparity of requirements and outputs results in a very diverse skill set, further limiting the ability to ascertain optimal education and training requirements.

The second question that arose is should fusion centers produce finished intelligence? This is an interesting question because it brings into play the actual role of fusion centers. As discussed previously, the mission of the fusion centers is defined by its leadership and should be articulated clearly in its mission statement. If the role of the fusion center is to be a repository and conduit for information, then fusion centers should not produce intelligence. Based on the comments and testimony by senior DHS officials, however, along with the continued allocation of resources to fusion centers by DHS, it appears the intent behind the National Network of Fusion Centers is for the fusion centers to increase their analytic capacity.
Our most fundamental responsibility remains preventing terrorist attacks on the homeland. And to support this critical mission we have worked very hard to strengthen and build our domestic information-sharing architecture by increasing the capacity of state and major- area fusion centers to serve as centers of analytic excellence. What exactly a center of analytic excellence looks like or should provide is still being developed, but the intent is clearly articulated fusion centers must do analysis.
A second perspective on the topic of whether or not fusion centers should produce finished intelligence is gained by looking at the allocation of intelligence products and whom they support. The criminal intel unit (CIU) analyst would primarily support the officer with RFI‘s. The CIU would also provide law enforcement leadership some perspective regarding longer term, i.e., operational level, analysis for deployment of resources for a specific task. The FBI and its FIG would support terrorism threats and feed intelligence information reports back into the Intelligence Community. Figure 4 below illustrates this intelligence support

construct.

There is significant support for the operations side of the spectrum, but very little support provided to the policy or resource allocation aspect. No one in this construct is supporting or providing intelligence for the governor or homeland security advisor on the long term threats and trends for intelligent allocation of resources. Although this construct may not be applicable to every fusion center, or there may be other entities that provide this long term policy analysis, the author‘s observations in the course of this research indicate this framework is the prevalent model currently being employed across the country.
Intelligence supports policymakers and decision makers. It is the researcher‘s position that fusion centers —must produce finished intelligence products because no one else has the access to federal, state, local and tribal information and intelligence to develop a comprehensive assessment, nor is any other entity servicing the senior leaders in the executive branch within the states. Fusion centers should be the premier all-source analysis center in the state, much like the CIA is at the federal level.

The third question that arose during interviews and conversations is can fusion centers do analysis. If one accepts the premise that fusion centers must produce the finished intelligence, the natural question is can they. There is little evidence that the majority of the fusion centers are able to produce quality, finished, all source intelligence products; however, the fusion centers are proficient at developing descriptive analysis at the tactical level. In the interest of full disclosure, the researcher was not granted access to any classified or non-releasable fusion center products. These assertions are based on conversations, interviews and research. There are three primary reasons for the current lack of capacity to produce finished intelligence: minimal education and training programs for intelligence analysts at the fusion centers, personnel issues, and leadership perspectives. All three of these topics will be expanded upon in the next section.

Based on the interviews and observations made during the research period, the two categories intelligence analysts need proficiency or expertise in are communication and analysis.
As stated earlier, the two broad focus areas for fusion centers are information exchange and intelligence. According to the distillation of the Baseline Capabilities document to effectively execute the Critical Operational Capabilities (COC‘s) of Receive, Analyze, Disseminate and Gather, intelligence analysts must be proficient in the two identified broad critical skills for intelligence analysts, the ability to communicate and the ability to analyze. The ability to communicate effectively is further broken down into written and oral communication skills. Intelligence analysts must be able to communicate effectively across the spectrum of written medium, whether it is a short point paper, an announcement to the sergeant conducting a shift change briefing or a strategic assessment to the leaders of a state.
The training programs of the Intelligence Community devote a significant amount of time developing this skill via practical application of each primary type of written product the agency produces from writing for the Presidential Daily Brief to writing a Defense Intelligence Note. These written products‘ structure, length and format are agency specific and are tailored to the target audience or primary consumer. This practical instruction during training provides IC intelligence analysts an opportunity to practice and receive feedback from both their peers and their instructors.
Intelligence analysts at fusion centers must also possess the ability to communicate effectively orally with law enforcement officers, other intelligence analysts, and senior

decision makers, whether it is via telephone in response to a RFI or in a formal briefing to the governor. The ability to effectively convey the analysis in clear, concise terms is vital. Although the intelligence analyst may be able to communicate, it is secondary because the most crucial asset for an intelligence analyst is the ability to conduct analysis. The analytic requirements differ greatly amongst the fusion centers. Some fusion centers are primarily call centers responding to requests from officers while others create strategic intelligence products. Thus, the ability of the intelligence analysts varies greatly as well. Every person interviewed stated the critical skills for intelligence analysts are the ability to write, brief and conduct analysis.

The observation chart, not every fusion center has a structured training program established. The majority of fusion centers require the Foundations of Intelligence Analysis Training (FIAT) as the primary requirement for their intelligence analysts. FIAT is a survey course (that meets the IALEIA standards for analysts) designed to introduce the analyst to a broad spectrum of ideas and concepts. It is very much based on the lower levels of Bloom‘s taxonomy, that of remembering and possibly understanding. Although the students do prepare and deliver a briefing at the end of the course, the potential for the students to apply more than one analytic technique, beyond a very rudimentary level, is doubtful. Based on the FIAT training schedule, the intelligence analysts are introduced to several analytic methodologies, but with almost no application.

Analytic personnel funded via grants are required to attend courses that meet or exceed competencies identified in the ―Common Competencies for State, Local, and Tribal Intelligence Analysts,which outlines the minimum categories of training needed for intelligence analysts. These include subject-matter expertise, analytic methodologies, customer-service ethics, information handling and processing skills, critical thinking skills, computer literacy, and objectivity and intellectual honesty.

Below is a cross referenced chart highlighting the common competencies as articulated in the Common Competencies for State, Local, and Tribal Intelligence Analysts compared to the training available to fusion center analysts and intelligence analysts hired within the Intelligence Community. The FIAT program is not sufficient to fulfill the DHS grant requirements. The course may be necessary, and even advantageous because of the shared experience of the analysts and the ability to network, but it can not stand by itself as the base of training for intelligence analysts.

As a method of comparison, the contact time for the entire FIAT course is forty hours. Within that timeframe the new intelligence analyst is presented a short overview of the history of intelligence, the purpose of intelligence and the intelligence cycle which totals approximately one hour and fifteen minutes. In contrast, BITAC devotes five and one half hours just to the Intelligence Community outside of DHS. BITAC commits another seven and a half hours to the components of DHS that are members of the Intelligence Community, so the total number of academic hours committed to just providing an overview and the missions of the Intelligence Community is thirteen hours, one third of the entire FIAT course.

The FIAT course provides approximately twenty one hours of exposure to analytic techniques, along with two and a half hours of creative and critical thinking, while the BITAC course devotes an entire week, forty hours, to the topic of critical thinking and analytic methodologies.

The FIAT course trains only two of the five common competencies, while potentially providing opportunism to collaborate with peers in an informal basis. BITAC, on the other hand, provides education and training in all five common competencies in a more robust manner.

During interviews and conversations with fusion center personnel, very few identified a desire to commit resources for advanced analytic technique training. California is the only

state with an accepted three year development plan for their analysts that includes advanced analytic coursework.

The personnel issues identified were hiring aspects, career progression, funding sources, and retention rates. These personnel issues each contribute to the inability to create an optimal education and training program for intelligence analysts at the fusion centers and directly impact the fusion centers‘ ability to produce quality, finished intelligence products as well. At the core of this personnel issue is the discussion of quality. A quality analyst is experienced and equipped with the appropriate skill sets.

One of the primary differences in the hiring criteria is the education level of the analyst candidate. While the Intelligence Community may value experience, it will not allow that factor to usurp educational requirements. For example, to be hired as an intelligence analyst with the Central Intelligence Agency the applicant must possess a bachelor‘s degree at a minimum. Generally applicants have a high grade point average and often times the applicants already have an advanced degree.

The fusion center arena is generally governed by the Law Enforcement Analytic Standards, one of which is the education standard for analysts.85 The Law Enforcement Analytic Standards provides a scale of experience versus education. For new analysts with no experience, a minimum education of a bachelor‘s degree is required. For an analyst with at least five years of law enforcement experience the minimum education is an associate‘s degree, while for someone with ten or more years of experience, either in law enforcement or the military, there is no educational level requirement.

This difference in educational baseline requirement is significant for three reasons. The first reason is that a college education teaches an individual how to conduct research, regardless of one‘s major field of study. The second reason a college degree is critical is that it provides the individual a baseline of critical thinking and problem solving skills. The third reason an educational base is important is it provides a basis for quality writing. All three of these reasons directly support and impact the intelligence analysts critical skills of writing, briefing and analyzing.

This difference in educational entry requirements also indicates the value each type of organization places on education and training. The Intelligence Community clearly values education, not only because it requires education for entry, but because it has numerous programs in place for intelligence analysts to pursue advanced degrees once they are hired. It appears the Law Enforcement community places a higher value on experience and training over education. This value is evident during its hiring process for intelligence analysts because it allows law enforcement personnel with street experience to laterally enter the analytic workforce without the requisite educational base. The emphasis on certification hours each year to retain law enforcement specific certifications rather than analytic skill sets suggests the fusion center approach is a time based versus skill based method. This observation further illustrates the law enforcement propensity to favor experience and training over education.

Funding is always a critical aspect of an organization. Table 2 indicates three of the seven fusion centers visited rely upon grant money from the federal government to pay for the intelligence analysts, either in their entirety or a large percentage. This outside source of funding allows the fusion center leadership to hire personnel they may not normally have had allocations for, but there are some tradeoffs to receive the grant money.

One requirement for the money already mentioned is the initial training requirement to ensure the intelligence analyst is at a sufficient level of capability. The other major issue with grant money is it is not guaranteed. The current grant system allocates the funds in two year cycles.

However, because the money is based on a two year cycle, the analyst hired already understands from the first day on the job that their job is not guaranteed and is dependent on two significant hurdles in the future: the federal budget will support future grants through FEMA and DHS, and the intelligence position is prioritized for funding within the state, meaning the allocation of funds to a state then becomes a state decision on how to further allocate the funds. The impact on intelligence analysts knowing they are on term employment drives many analysts to seek more assured employment opportunities.

Directly tied to the DHS grant conundrum is the lack of positions that intelligence analysts can progress into. Four of the seven fusion centers had positions within its personnel documents authorizing either senior or supervisory intelligence analysts. Although the percentage for this sample is over 50 percent across the fusion centers visited, the number of senior analyst positions compared to intelligence analyst positions is very small within the fusion centers -- generally one senior analyst to six intelligence analysts. This allocation and authorizations for senior intelligence analysts or supervisory analysts is very small compared to what the Intelligence Community enjoys. Most fusion center analyst applicants are aware of the lack of progression opportunities either during the hiring process or upon being hired. This lack of upward mobility, especially in today‘s culture, almost assures that the fusion center will have to hire a new intelligence analyst within two years to replace the one who left.

The most important, personnel issue affecting the development of an education and training program is the issue of retention. Six of the seven fusion centers indicated they have a high turnover rate. The seventh fusion center‘s intelligence analysts have only been in the fusion center for about six months so their experience is an outlier and should be discounted on the issue of retention.

All three of the previous personnel issues directly impact the retention issue. Who the fusion centers hire contributes because if they hire young college graduates per the Law Enforcement Analytic Standards, after a short period gaining experience, other agencies tend to hire the intelligence analysts away with increased salary. Not only do the salaries tend to be higher, the salaries usually are not tied to grant funding, meaning the permanency of the job is significantly higher. The intelligence analyst does not have to worry about the end of the grant term approaching and whether or not the position will be validated. The third challenge of career progression also inhibits retention. The lack of, or perceived lack of, career progression affects whether or not intelligence analysts choose to remain with the fusion centers or seek other employment.

These interconnected issues of hiring, funding, progression and retention of intelligence analysts play a crucial role in the ability to develop an optimal education and training program. If the fusion centers are constantly hiring new personnel because of the grant funding versus state general funds, or analysts depart the fusion center due to the lack of progression opportunities, there is no need to develop a long term in depth training program for analysts because the fusion centers will always be training new analysts. In turn, the fact that there is little experience amongst the intelligence analysts directly impacts the fusion center‘s ability to produce quality, finished intelligence products.

Leadership

The final area affecting the development of education and training programs within the fusion centers is the leadership of the fusion centers. There are three contributing factors surrounding the leadership function: the host agency and history of the fusion center, the role

of the analyst in the fusion center and the experience and background of the leadership in the fusion center.

Host Agency and History

Six of the seven fusion centers visited are hosted by a law enforcement agency, generally the state police. What this means is, generally speaking, the majority of the fusion center employees will be affiliated with the host agency, with that particular organizational culture permeating the fusion center. The dominate culture amongst analysts who work for and with state troopers is one of support. Meaning, the analysts self identify their primary job is to service Requests For Information (RFI's) from the state troopers on the side of the road. Although this provides a great service, it is not an intelligence related function. In fact, one fusion center actually has an entire set of record technicians, who are below the intelligence analysts on the organization chart, who are the primary servicers for the RFI's.
Another aspect of the host agency influence is the history of the fusion center. The majority of fusion centers grew out of, or are a consolidation of, criminal intelligence units. Although this is not true for all fusion centers -- in fact some fusion centers were new entities created from scratch -- the fusion centers usually trace their history to the criminal intelligence units within the law enforcement organs of the state. Since the culture of law enforcement analysts is one of case support or responding to RFIs, the consolidation of criminal intelligence units into the fusion centers creates a dominate culture of case support, potentially reducing the broader analysis capability.

The second leadership aspect that affects the fusion center's education and training, as well as its ability to produce intelligence, is the mentality and perceptions of the leadership within the fusion center. The majority of fusion center leaders are sworn law enforcement personnel. This in itself is not negative, but there may be several byproducts of having sworn personnel in charge. The culture of most law enforcement personnel is one of reactive policing, although that mindset is changing with the adoption of intelligence-led policing. Many mid-level and senior managers and leaders in the law enforcement realm have not bougnt into the utilization of intelligence to drive action and decision making.
Another trait of sworn law enforcement personnel is the value they place in training over education. This theme was mentioned in the hiring aspect as well. Many law enforcement leaders, because of their experience and their requirement to maintain annual training certifications, are more comfortable with the concept of training, refining skills to sustain job performance rather than discussing the education of intelligence analysts and analytic methodologies.

The intelligence analyst working within the IC views the primary consumer of the intelligence product to be decision makers or policy makers. It may be the President or a Combatant Commander but the bottom line is intelligence drives resource allocation and decisions.
However, the same does appear to hold true for intelligence analysts within the fusion centers. Observations made during the site visits and interviews identified the primary consumer of fusion center intelligence as the trooper or first responder via the terrorism liaison officer (TLO) or the Fusion Liaison Officer (FLO) programs. The majority of fusion centers identified their primary task as answering requests for information from the law enforcement officers in the field. Although this activity does inform decision making, it is at

the extremely tactical level.
The host agency and the fusion center history, the role of intelligence analysts and the attitude and perceptions of the fusion center leaders must be included in any discussion regarding the development of a universal education and training program for intelligence analysts. Each of these elements affects the viability of an education and training program along with the outcomes of that program, quality finished intelligence.

All three of these broad impact areas, the current education and training of intelligence analysts, the personnel issues, and the leadership aspects, impact the feasibility of developing a universally accepted education and training program and the expected outcome of any intelligence analyst program, good analysis.
If fusion centers do not invest in educating and training their analysts they will continue to have poor retention. If they continue to hire the wrong people and not provide a career path, they will continue to have low retention. If they do not secure alternative funding sources, they will not retain the best young analysts.
Many of these issues can be mitigated or exacerbated by the leadership of the fusion centers. The leadership needs to understand and appreciate the value the intelligence analysts provide to the entire spectrum of consumers. Fusion center governing bodies must address all of these issues when selecting the fusion center leadership.
The intent of the research was the establish the optimal education and training curriculum for intelligence analysts at state fusion centers. During the course of the research, the author arrived at the realization that there could not be an easy answer to this question. However, the two broad areas of importance for fusion center intelligence analysts were solidified.
Intelligence analysts must be able to communicate and analyze. This communication requires both written and oral aspects, from writing a one page point paper to briefing the governor of the state. The training requirement for communicating is very center specific due to the internal templates and formats and must be a leadership or supervisor priority when a new analyst is hired.
Attempting to discover an optimal program for analysis education and training was very complex. There are restrictions from members of the Intelligence Community regarding the releasability of the curriculums which prevented a thorough analysis of contact hours on each topic affecting analysis. The different ways the fusion centers utilize an intelligence analyst result in different skill requirements. How the leadership views the role and mission of the fusion center drives education and training requirements.
During the research phase of this paper, several unanticipated questions arose beyond mere curriculum analysis and the skill set of intelligence analysts. The three questions most discussed during the course of research were: how does one assess what an intelligence analyst needs for education and training without a clear standard for what an intelligence analyst should do or skills he or she should possess. There are no universal, open source standards, or even an agreed upon definition, of an intelligence analyst‘s duties in a fusion center, especially with regard to analysis.
The second question that arose was whether or not fusion centers ―should‖ produce finished intelligence. This question usually came from federal agencies as a response to intelligence sharing and expected outputs from the fusion center. The question of ―should‖ is critical because if the expectation is fusion centers are merely information repositories or hubs, then there is no need to invest in intelligence analyst education and training. Rather, simply hiring numerous database technicians to access the information would suffice.
Although their position is understood, the researcher believes the interviewees actually were speaking to the third question of can the fusion centers produce finished intelligence

products. The question of capability gets right to the heart of the problem of intelligence analyst education and training. If no one within the fusion centers knows what questions to ask or what a good product is, there can be no education or training program put in place to achieve the acceptable standard finished products at each level of operation: tactical, operational, or strategic.

These questions must be answered prior to effectively addressing what education and training is necessary for intelligence analysts. If the leadership at every level is content with the fusion centers merely being information repositories, not much needs to change regarding intelligence analyst training programs. However, if the leadership at both the state and federal level believe there is a shortcoming regarding the education and training of intelligence analysts in the fusion centers, below are a few recommendations to move the discussion along regarding the optimal education and training standards.

Immediate

The Department of Homeland Security must develop universal standards regarding the intelligence analysts in the state and major urban are a fusion centers to compare capabilities across the emerging National Network of Fusion Centers. Currently there are no universal standards, only the common competencies document to serve as a guide for intelligence analyst capabilities and requirements. The recently completed Baseline Capabilities Assessment (BCA) of the four Critical Operational Capabilities (COC's) (Receive, Analyze, Gather, and Disseminate) is rather subjective due to the lack of established criteria or metrics.

The Department of Homeland Security must extend funding for the Intermediate Fusion Center Analyst Training (IFCAT). This program needs to continue and expand, as it meets the common competencies requirement, provides a good mix of in-residence instruction(which requires time away from the fusion centers), and instructor facilitated distance learning between the in- residence modules. Numerous analysts stated it was an outstanding course, some saying it was the best course they had attended as part of their training programs.

Even if DHS does provide funding for the IFCAT program, DHS also needs to make the IFCAT program a requirement for DHS funded analysts. IFCAT was repeatedly identified as one of the most useful courses the intelligence analysts had attended. This program must be incorporated into all intelligence analysts career progression, or should be renamed and become the initial entry training for intelligence analysts hired with DHS grant money, regardless of experience level of the new hire.

DHS should review the courses currently accepted as meeting the DHS training requirement to attain the common competencies, reduce the number of courses and reallocate the money to assist the fusion centers with travel costs or make them fully funded, in resident meaning all costs for lodging and meals are included program. Currently many programs are tuition free but require the fusion center to pay for the lodging, travel and per diem costs of the sponsored student. This additional travel burden reduces the number of intelligence analysts who can attend. If the federal government expects fusion centers to be an integral part of the Nation's early warning network, an investment must be made in intelligence analyst training.

DHS must educate and incentivize the fusion centers to revise the hiring process. The current Law Enforcement Analytic Standards allows lateral entry into the analytic arena without a strong base of civilian education or the requirement for further analytic training. A mandatory analytic training requirement must be established, even if transitioning from the law enforcement side because criminal analysis case support is significantly different and requires a different skill set when compared to intelligence analysis.

DHS must incentivize an intelligence analyst professional development program. DHS needs to highlight the importance of intelligence analysts in fusion centers by providing an incentive system for fusion centers that develop and maintain a professional development program, utilizing both internal assets (mentorship, leverage local subject matter expertise)

and external assets (like DHS‘ Mid-career Intelligence and Threat Analysis Course or the Advanced Analyst Program).

DHS should develop and mandate training for mid and senior leaders of fusion centers to ensure the leadership receive the education necessary for them to maximize the capabilities intelligence analysts bring to the fusion center. One of the observations made was the lack of understanding of how much of a force multiplier the intelligence analysts can be if tasked properly. One interviewee stated Most leaders (in the fusion centers) don't know what they don't know. It is in DHS‘ best interest to educate fusion center leaders on the capabilities and importance of their analysts through programs such as the Fusion Center Leaders Program hosted by the Naval Postgraduate School. Currently there is no resource allocation to educate the leadership of the fusion centers.

Fusion centers must develop and fund positions with progressing responsibilities and compensation for intelligence analysts within fusion centers to reduce turnover, increase depth of knowledge, reduce reoccurring training costs, and illustrate the importance of intelligence analysts. Although some fusion centers have a mechanism to move from intelligence analyst to senior intelligence analyst, many do not, nor is there a uniform mechanism or matrix as to what makes someone qualified to be a senior intelligence analyst. This difference of seniority perspective affects effectiveness and collaboration amongst fusion centers and between fusion centers and the Intelligence Community.

DHS and ODNI should develop and oversee an intelligence analyst exchange program between the Intelligence Community and fusion centers. This exchange program would provide analysts an opportunity to gain an appreciation for the challenges associated with each level of analysis, develop a network of experts to leverage for future collaboration and bring back emerging analytic techniques to their home agency.

ODNI, primarily through DHS, must make introductory intelligence analyst courses such as Basic Intelligence Research Specialist, the Career Analyst Program, and Fundamentals of Intelligence Analysis available to fusion center intelligence analysts. This would create a synergistic effect across the Intelligence Community and fusion centers. The incorporation of fusion center analysts into the IC student population would provide a different perspective for the class to consider and provide the fusion center analysts a clear baseline of capability comparable to the Intelligence Community analysts, increasing the credibility of the analysis.

ODNI, through DHS, should integrate fusion center analytic elements into the Intelligence Community. As budgets begin to shrink across all levels of government, the potential exists to increase the stature of the fusion centers and the intelligence analysts by incorporating the fusion centers into the IC. Potentially, each fusion center could become a subject matter expert (SME) in a topic relevant to the state or region and all requests for information sent to the Intelligence Community on that topic would be serviced by the designated fusion center.

DHS needs to develop a certification program for fusion centers to attain and be rewarded or compensated for having the fusion center certified by an outside agency conducting an independent, external review. This could be modeled after the current law enforcement model of The Commission on Accreditation for Law Enforcement Agencies, which has standards for each aspect of law enforcement activities.

Congress, through DHS, must transfer grant responsibility and facilitation for fusion center funding and support from the Federal Emergency Management Agency (FEMA) to the state and local office (SLPO) in DHS, specifically the Office of Intelligence and Analysis. The current process of fusion centers competing for homeland security grant funds within the state, after the state receives the funds through the FEMA process, is suboptimal. The fusion

centers can not program any activities tied to the grant money beyond the two year window, which affects many aspects of the intelligence analysts education and training, retention and leadership.

This research paper identified numerous aspects of the education and training programs within fusion centers that must be addressed. Future research should address the lack of uniformity across the fusion centers and its impact on capability, the lack of organizational culture that recognizes and encourages educational contributions to intelligence analysis when compared to training skills, and the impact of non- involvement of senior executive leaders at the state and local level as consumers of fusion center products.

Conclusion

The intent of this paper was to establish or recommend an optimal education and training program for intelligence analysts at the state and major urban area fusion centers. Although the primary research question could not be answered, several themes emerged, such as the need to educate analysts in communication skills and analytical methodologies. Almost every person interviewed stated these basic skills are paramount for an effective intelligence analyst.

The second theme that arose focused on the requirement and capacity of fusion centers to produce finished intelligence. This involves both the education and training of intelligence analysts but also the preparation, education and training of senior leaders within the fusion centers as well.

The final theme evident throughout the research were the challenges within the fusion centers themselves. The lack of uniformity is challenging for leaders beyond the actual fusion center to get an accurate assessment of the fusion centers capabilities and contributions.

The federal government, in cooperation with the National Fusion Center Association, the National Network of Fusion Centers, DHS, and any other vested partners needs to discuss and resolve these issues to effectively move forward. If the fusion centers are not contributing to the defense and security of the Nation as a whole, then their value and utility should be seriously reconsidered.

In the United States, the training and education of national security intelligence analysts in both government and academia is undergoing significant changes. Most of them are associated with efforts to improve the quality of analysis in the wake of the 11 September 2001 (9/11) terrorist attacks on New York City and Washington, D.C., and the controversy over the accuracy of intelligence regarding Iraq's weapons of mass destruction (WMD) programs. Additional changes are likely as analytic training is subsumed into a broader national effort to professionalize the country's analytic corps.

In terms of intelligence analysis, the term “training” is usually associated with internal government programs intended to provide specific instruction for the implementation of job-related tasks, while the term “education” is normally associated with academic courses or programs geared to provide more conceptual or theoretical frameworks having less immediate effect on performance, but laying the foundation for improved performance over the longer term. But these distinctions between training and education are disappearing. Government agencies are providing educational opportunities to their students in addition to the more frequent training opportunities, while academia is simultaneously beginning to provide training in analytic production while maintaining its traditional educational role. Thus, at least in the U.S., the lines between government and academia, in terms of providing analytic training and education, are beginning to blur.

Practitioners in any profession care about performance, both organizational and individual, and one way to improve performance is to increase proficiency. Organizations can employ training as a tool to improve practitioner proficiency, primarily by using that training to increase analytic expertise.

Over the past eight years, the United States government has created a number of organizational entities responsible for improving analytic training in its intelligence sector. For example, in 2000, the Central Intelligence Agency (CIA) created the Sherman Kent School for Intelligence Analysis to train its analysts. In 2002, the Agency created CIA University as a broader effort to coordinate training across the organization. The Federal Bureau of Investigation (FBI) later created its College of Analytical Studies, and the Office of the Director of National Intelligence (ODNI) created the "virtual" National Intelligence University as a way to coordinate training across the Intelligence Community (IC). The new "Analysis 101" course, which provides the same basic training to analysts across the Community, is an example of this kind of coordination.

While most of these training centers are recent creations, at least one predated the recent push: the Joint Military Intelligence Training Center (JMITC) at the Defense Intelligence Agency (DIA). The JMITC was created in 1993 as the training complement to an educational entity that has been in existence at DIA for decades.

The various analytic training courses differ in terms of seniority of student, content, and duration. Some, such as the CIA's Career Analyst Program, are generic analytic courses for entry level analysts, and may last for several months. Others are more targeted to individual analytic disciplines—such as political, military, economic, or leadership analysis—and are taught over a shorter period of time. While the names and general goals of the intelligence courses are unclassified, the specific contents for most of them are not in the public domain.

While the individual members of the U.S. Intelligence Community have been creating analytic training centers, they have also begun to devote more attention to the teaching and application of structured analytic techniques such as Analysis of Competing Hypotheses, brainstorming, key assumptions check, red cell analysis, devil's advocacy, Team A/Team B, alternative futures, and others. In contrast to the old way of doing analysis, which involved reading a lot and coming to a judgment about the issue, based on the individual analyst's expertise, the new way of doing analysis involves the application of structured techniques, which are more amenable to formal instruction.

There is a "chicken and egg" question here, though. Do the training centers teach structured methods because they are the best way to do analysis, or do they teach structured methods because that's what they can teach? And, are the intelligence organizations emphasizing the value of structured methods because their application produces better analysis, or because the formal process of teaching these methods provides a way for the organizations to prove to external overseers that they are improving in the post-9/11, post-Iraq WMD environment?

As yet, answering these questions may not be possible. As argued elsewhere, teaching these structured methods could be useful because having such an approach to assessing a problem is better than none at all. But, before the teaching and application of these techniques becomes mandatory, taking a step back and asking just how structured intelligence analysis should be, and whether or not that structure will actually lead to improved analysis, is important. At this point—given the general intuitive approach that analysts use and the relative paucity of data showing that structured techniques would improve accuracy—the value of mandating the use of more structured methods is uncertain. Teaching them may be important, if only because any inherent value in their application might be useful to practitioners. But people think in different ways, and until the Intelligence Community can demonstrate that these techniques are an improvement over time-honored intuitive models for

all practitioners, their use should not be mandated. Instead, more time, money, and effort should be devoted to developing the capacity to evaluate the utility of these approaches rather than merely developing and teaching them.

While training is accepted as an important factor in improving practitioner proficiency, education supplements training by providing the time to learn and think about concepts and theories that can be used to provide context for what the analyst does on the job. The literature on intelligence analysis frequently observes that analysis proceeds at a frenetic pace, with information coming at analysts as if they were figuratively drinking water from a fire hose. In addition, a frequent critique of the analytic process is that it tends to emphasize short-term analytic reporting, known as current intelligence, over longer analytic reports. This focus on current intelligence has significantly eroded analysts' ability to acquire topical expertise because longer research reports are a primary means for an analyst to learn more about a particular issue.

Analysts only infrequently have the opportunity to think deeply and carefully about the issues they are addressing. They therefore find various kinds of sabbaticals—such as rotation to a staff job or the opportunity to pursue graduate education fulltime—to be conceptually refreshing. But the value derived from these sabbaticals is more than being merely an escape from the pressures of analytic production; it also comes from the opportunity to reflect on the analyst's experiences, identify what worked and what did not, and to explore new substantive and procedural ideas that relate to his or her professional responsibilities. These sabbaticals are educational in both a formal and informal sense. More structured educational opportunities provide the analysts with opportunities to learn concepts that might help them on the job, but that they wouldn't otherwise have time to explore.

For example, according to Ernest May and Philip Zelikow,

from 1986 to 2002, Harvard University's John F. Kennedy School of Government had an executive program for senior managers in the US intelligence community, known as the Intelligence and Policy Program. It ran once or twice a year for one to three weeks. Participants typically had twelve to twenty years of experience. … The Intelligence and Policy Program aimed to teach managers in the intelligence community how to think about needs in the policy community and about ways in which they and their associates might better serve those needs. This would be done in part by exposing them to elements of decision, bargaining, and organization theory, but primarily through Socratic discourse centered on case studies.

This program was a form of education for analysts and managers of analysts, because—as Zelikow and May put it—most attendees "came from the Directorate of Intelligence (DI) in the Central Intelligence Agency." Harvard no longer offers this course; when the CIA University was created in 2002, a decision was made to teach it in-house rather than outsourcing it.

Another example of analytic education provided by the government can be found at the National Defense Intelligence College (NDIC; formerly known successively as the Defense Intelligence School, the Defense Intelligence College, and the Joint Military Intelligence College), which provides undergraduate and graduate degrees in Intelligence Studies. Its earliest iteration, the Defense Intelligence School, was created in 1962 by "consolidating all strategic defense intelligence education into a single organization" which "was attached to the Defense Intelligence Agency for administrative support." Its "short courses emphasized specialized training while the year-long, graduate-level … (course) emphasized the development of broad career skills."

NDIC and the Joint Military Intelligence Training Center (JMITC) reprise this division between short and longer courses, with JMITC specializing in short course training and

NDIC providing both undergraduate and graduate education in the study of intelligence. NDIC's accredited Masters degree program provides intelligence professionals with "the opportunity to engage in advanced study and research in intelligence while concurrently improving the quality of intelligence analysis."
NDIC may also have been the model for the creation of the National Intelligence University. In 1999, Lloyd Salvetti—at the time the director of CIA's Center for the Study of Intelligence—said he
believe(s) we need to explore creation of a National Intelligence University that would more fully inform professional military officers and civilian government employees about the capabilities and processes of the intelligence community. Our University would not necessarily have a campus, but rather would consist of coordinated course offerings that would be taught by the (IC= members.
He then went on to say that he believed that the JMIC (now NDIC) should be "the foundation for such a university."
The National Intelligence University, created after the 9/11 attacks, is, in its current form, a university in name only, a virtual university without a faculty or actual classrooms. Meanwhile, the NDIC continues to push the envelope in terms of intelligence education by establishing a cooperative Ph.D. program with the School of Public Policy at the University of Maryland at College Park. According to the NDIC, the program is "designed for NDIC students, graduates and faculty or civilian DIA employees only," with the ultimate goal being a dissertation "on an unclassified intelligence topic."
While the government has been developing its own capacities to train and educate analysts, academia is beginning to play a larger role in the process.

Traditionally, academia provided four separate kinds of value to the Intelligence Community's analytical personnel: (1) as a place to recruit graduates with substantive knowledge and expertise of use to the Community; (2) as a place to send analysts for acquisition of more or different knowledge (i.e., continuing education); (3) as a place to acquire specific knowledge or expertise from academic experts; and (4) as a place to acquire information or advice in terms of managing the Intelligence Community from those who specialized in intelligence studies (frequently from either a political science or history perspective).
Each of these four kinds of relationships between academia and the U.S. Intelligence Community continues, but a fifth is beginning to emerge: academia as a provider of graduates possessing a practitioner's skill set (i.e., training), as well as an educational base emphasizing procedural expertise (i.e., analytic tradecraft) rather than substantive knowledge. It does this primarily by taking the knowledge that has been developed about the processes for doing intelligence analysis, and teaching those processes to the students. The academic programs that produce these graduates are identified as "intelligence studies" programs, with a dual focus on both practice and theory. Graduates of these programs are considered "generalist" analysts in a specialist versus generalist typology.
As previously argued, "individual analysts possess varying cognitive strengths and weaknesses. As a senior (CIA Directorate of Intelligence or CIA/DI) analyst noted in an internal computer discussion in 1997, there may be two types of cognitive preferences not "mutually exclusive" that differentiate one kind of analyst from another: "Some people are better at … a broad range of issues, areas, and disciplines. These make the best current intelligence analysts because they generally are quick to learn an account.In simple terms, these are the people who are good at crafting a coherent story from a jumble of seemingly disconnected parts. Becoming an expert at this kind of analysis requires a great deal of experience. … An expert of this type needs to continuously cast a net over a greater range of

evidence and then relate it." He then goes on to add that it is better if this kind of analyst has experience on multiple accounts. Then he contrasts this expert generalist to "the other type of expert analyst … who concentrates on learning as much as possible about their chosen subject, area, or discipline. These are our specialists. They do the basic research, build our corporate knowledge base, and concentrate on depth rather than breadth. In the DDI's old days, managers called these analysts the "investors." They put money in the bank account which the current intelligence analysts draw out to spend. … University study, technical training, language proficiency, and several years on an account are a necessity for developing the type of analytical expertise we need for our specialists."

Both kinds of analysts provide valuable and complementary contributions to the production of finished intelligence analysis, but, as I have written elsewhere, the Intelligence Community has historically been remarkably blind to differentiation in both analysis and analysts. Instead of differentiating between analysts (the intelligence community) uses a one-size-fits-all recruitment, placement, training, and promotion strategy, and for the most part views analysts as interchangeable. As a result it has perennially had difficulty creating an appropriate mix of analytic abilities and skills for intelligence production when an issue or crisis develops.

Most discussions regarding analytic improvement or reform emphasize the importance of the specialists and suggest ways to bolster their expertise or contributions. Yet, the important, and often underappreciated, role of the generalist analyst has not been sufficiently acknowledged or emphasized.

Of late, however, a focus on the generalist has emerged in academia, primarily through Intelligence Studies departments such as the one at Mercyhurst College in Pennsylvania that emphasize the education of analytic generalists. Mercyhurst's goal is to produce graduates who possess knowledge about the theory of Intelligence Studies, as well as proficiency in the practice of intelligence analysis. Some evidence indicates that the broader U.S. Intelligence Community values this approach; Mercyhurst has contracted with private sector firms connected to the IC such as Booz Allen Hamilton and Northrop Grumman to provide graduate-level certificates in Intelligence Studies to some of their selected employees. In addition, Mercyhurst has worked, in conjunction with the National Intelligence Council, on exploring the potential of wiki technology by having its students develop a wiki-based National Intelligence Estimate on the threat from infectious disease; Mercyhurst faculty have developed courses on contract for the FBI's College of Analytical Studies, and also provide "train the trainer" courses to other IC entities regarding the teaching of Structured Analysis of Competing Hypotheses.

But Mercyhurst isn't the only college now emphasizing analytic education with an emphasis on the practical skill set. Other schools have developed Intelligence Studies programs recently or are in the process of developing them. For example, American Military University (AMU), an accredited online university which offers undergraduate and graduate degrees in Intelligence Studies, currently has over 3000 students enrolled in those programs. AMU has already established cooperative relationships with several military intelligence training schools, including the Army's intelligence training school at Fort Huachuca in Arizona. Intelligence Studies departments, programs, or concentrations have sprung up at Embry-Riddle Aeronautical University in Arizona, Notre Dame College in Ohio, Johns Hopkins University in Maryland, and James Madison University in Virginia, among others.

Not so long ago, the CIA's Center for the Study of Intelligence was able to document the total number of academic courses on intelligence being offered. At this point, doing so would be nearly impossible given the proliferation of courses over the past few years. This success is based on previous efforts to advance the study and teaching of intelligence in academia, but with that achievement comes the corresponding problem of trying to accurately describe this growing academic field.

Differentiation between the U.S. government training and academic education has begun to fund the development of Intelligence Studies capabilities and programs in academia through the Intelligence Community Centers of Academic Excellence (IC/CAE) program. This program is intended to increase the cultural diversity of IC personnel by providing grants to colleges with diverse student populations to help create the infrastructure necessary to produce graduates with knowledge, skills, and abilities of value to the Intelligence Community. In 2005, the "maximum level of the grant awards [was] $750,000 per year with up to four option years based on the accomplishment of criteria and metrics."

While the colleges and universities are not required to use the money to develop Intelligence Studies departments per se, at least a portion of the money has been used by the recipient institutions to increase their ability to teach intelligence-related subjects, including analysis. In 2006, IC/CAE held a workshop for academic programs on "Teaching Intelligence in America's Universities," and in 2007 held a workshop titled "Partnering With America's Universities: Understanding the IC Critical Missions, Global Trends, National Security Challenges and Impacts." Through these workshops, the IC/CAE program is able to provide representatives from many different colleges and universities with information about teaching intelligence, insight into the IC's current personnel requirements, and the kinds of knowledge, skills, and abilities that graduates should possess in order to get those jobs. Specifically, in terms of analytic training, the workshops also included presentations by CIA/Kent School instructors on how to teach intelligence analysis to students in academia. This IC/CAE program is essentially an effort on the part of the government to coordinate with academia in a way that would benefit both parties. But it is not the only such effort.

The International Association for Intelligence Education (IAFIE) is bringing government and academia (and training and education, and theory and practice) together as well. Created in 2004 as a mechanism to advance the teaching of intelligence, IAFIE serves as a catalyst for the sharing of information about intelligence training and education for those currently practicing intelligence and those desiring to enter the field. As a result, those who teach intelligence in government and those who teach intelligence in academia are given an opportunity to exchange opinions on events or resources of mutual interest, course materials, pedagogy, and the like. Because IAFIE spans the national security, law enforcement, and competitive intelligence disciplines, it also provides a venue for cross-fertilization among them. As of late 2008, IAFIE had more than 500 members, representing numerous institutions across both government and academia.

While IC/CAE and IAFIE are working to bring the government and academia closer, at least in terms of teaching intelligence (with an emphasis on analysis), broader forces may foster additional changes.

Over the past few years the U.S. Intelligence Community has begun viewing analytic training in context of analytic professionalization. Intelligence analysis is both a craft and a profession: a craft because it requires mastery of a skill set that can be acquired only through practical experience, and a profession because much of the substantive knowledge that practitioners require can be transferred to new practitioners through a structured personnel process that includes an educational component. But, until now, intelligence analysis has been managed largely as a craft rather than as a profession. Because of this, intelligence analysis has neither well-defined systemic formal knowledge—such as a coherent doctrine or theory—nor standards that are formulated or enforced by other members of the profession. Knowledge regarding intelligence analysis methods has not been cumulative, and the various attempts to improve organizational performance have remained isolated from other efforts. No codified process for entry into the profession, standards in terms of educational

requirements, professional development processes, or ways to accumulate and transfer knowledge from generation to generation currently exist. As a result, intelligence analysis as an occupation is not "all that it could be." Therein begins the discussion about professionalization and improvement in the practice of intelligence analysis.

I have previously described how intelligence analysis appears to be spontaneously professionalizing. Specifically, the formal practices of a profession are being developed simultaneously along five different tracks: human capital management; training and education; certification and licensing; knowledge advancement; and ethics. The premise here is that for continued performance improvement, analytic training cannot be addressed absent a concern for other factors that affect both individual and organizational performance. The broader professionalization process is an effort to formalize some of these other factors.

To illustrate this argument, medicine can be used as a possible model for the professionalization of intelligence analysis. Yet, medicine is perhaps the hardest case to make because it is arguably the most formal of all the professions, and it may provide an inappropriate standard. As a result, medicine should not be the only model considered. Rather, it provides a starting point for discussing the possible paths that the professionalization of intelligence analysis could take. Other professions, including education or journalism, may provide better models for the professionalization of intelligence analysis, particularly in terms of the profession's educational practices.

Regardless of the model or analogy chosen, however, the continued professionalization of intelligence analysis has implications for existing programs in both government and academia, in terms of training, education, and knowledge advancement.

Professionalization, in the context of both preemployment education and new analyst training, constitutes the establishment of standard operating procedures to be implemented by organizations in order to improve the quality of the final product. But, to convince others of the need to establish these more formal processes, their benefits need to be proven rather than merely asserted.

In training and education, the link is to practitioner proficiency. In order to be able to improve practitioner proficiency, analytic trainers must deconstruct the analytic process—to figure out what was going on, and how it could be improved—in order to teach anything of real use to the analyst. But knowing whether or not this kind of training actually improves practitioner proficiency, absent some kind of evaluative process, is not possible. To ensure a link between training and education in both government and academia, the benefits must be actualized, then proven.

In other professions, such as medicine, law, education, business, and journalism, preprofessional graduate-level educational programs provide prospective new entrants the necessary knowledge and skills to succeed as practitioners. But some professions—such as medicine and law—require and use that academic credential as a way to regulate the expertise of their practitioners. Mandatory preemployment educational requirements ensure that all prospective candidates are schooled and acculturated into that profession before they actually enter it. And these professions would not require this kind of preemployment education unless, in the aggregate, they lead to more proficient practitioners. Of course, exceptions are possible. Could someone become an effective lawyer or physician without going through those preprofessional programs? Certainly—through self-study or an apprenticeship, as was frequently done years ago. But those would now be the few exceptions rather than the rule. An educational requirement provides a formalized, regulated approach to the acquisition of the knowledge and skills required to do well in a profession, as well as a means of ensuring that practitioners possess at least a minimum expertise and proficiency. Other professions—specifically education, business, and journalism—are somewhat less

regulated. Their graduate level academic educational programs provide knowledge and contacts, but are not necessary for success as a practitioner. They might help, but not to the same degree that a graduate education does in medicine and law.

For intelligence analysis training and education programs to be incorporated fully into the professionalization process and thus required for all practitioners as they are in medicine and law, trainers and educators must be able to deconstruct the knowledge, skills, and abilities expected of the analyst, and build the educational infrastructure necessary to improve the analyst's performance. And if a link can be made between the educational program and increased proficiency, the grounds then exist to begin requiring that program for all practitioners. In the end, intelligence educators should prove that their intelligence and training programs produce a better intelligence analyst if they want their programs to be mandated as part of a professionalization process.

At the ODNI level, considerable efforts are going on to professionalize intelligence analysis, with training being incorporated into this process. For example, the ODNI staff has been developing analytic competencies and standards for the IC that will be initially incorporated into analytic training programs across the Community, and, if they prove successful, may eventually be incorporated into performance reviews and promotion decisions.

In addition, the IAFIE's 2007 conference addressed the professionalization of intelligence, and its 2007 colloquium addressed the setting of standards for the teaching of intelligence.[2] Discussions continue within the IAFIE about the possibility of turning it into an accrediting body for Intelligence Studies programs—the educational complement to practitioner discussions regarding analytic certification processes. Members of IAFIE have intensively discussed the role that it can play in terms of developing standards for certificate, undergraduate, and graduate programs in Intelligence Studies.

While a good argument can be made that such a function may be needed in the future, developing standards for programs that either train or educate analysts is premature. Instead, intelligence educators should reevaluate Intelligence Studies as an academic discipline with a discussion revolving around first principles such as purpose or value.

Yet, these IAFIE-derived discussions are a valuable component of the broader conversations going on within the Intelligence Community over how to professionalize its analytic corps through more formal personnel practices. The entity most responsible for the professionalization of medicine in the United States—the American Medical Association—was founded in 1847 out of a concern about unregulated medical schools and the poor training and education that some doctors were receiving therein. The AMA's initial goal was to “elevate the standard of medical education in the United States,” but, over time, its mission expanded to include other aspects of medical professionalism. With the AMA as an obvious model, the IAFIE is one organization that holds particular promise in contributing to the future professionalization of intelligence analysis.

Another aspect to professionalization overlaps intelligence education: knowledge advancement. Building knowledge about the field is an important part of any profession. For intelligence analysis to be considered as a profession, it must develop a unique and specific body of knowledge, to be taught to new entrants via a professional education process.

While an important component of an Intelligence Studies department is to prepare a student for entry into the occupation, an emphasis on the skill set of the analyst is not sufficient. The academic justification for the existence of Intelligence Studies is to provide greater knowledge and understanding of the field itself. And by creating coursework about the practice of intelligence and all that it involves … conventionally understood as “intelligence studies” … the transmission of this knowledge to students in courses about intelligence should provide them with a context that allows them to do well in the occupation over the

long-term.

For example, courses built on the study of intelligence failure, intelligence ethics, intelligence oversight, and the comparative study of intelligence—each relying on the best scholarship residing in the intelligence literature—could provide graduates of an Intelligence Studies program with the conceptual foundation useful to them much later in their career. These courses should encapsulate the range of issues in the intelligence literature, and no Intelligence Studies program should exist without those kinds of courses.

In the end, the value of Intelligence Studies departments—whatever will make them unique from such other departments as national security studies, homeland security, and criminal justice—should come, not from the career aspirations of their students, but rather from the intelligence-specific knowledge offered by their faculty. And that knowledge should address issues about intelligence at a conceptual and theoretical level, in addition to the more process-oriented knowledge directly related to actually doing intelligence analysis.

Basically, a profession without its own unique body of knowledge is merely a craft masquerading as a profession. So, one implication that intelligence professionalization may have for intelligence education is the need to focus more attention on building a unique intelligence literature—in all of its forms—and making it more cumulative, i.e., a focus on theory as well as practice. This aspect can form the second part of an educator's contribution to the professionalization process—by advancing knowledge in the field through scholarship.

Both government and academia have so far contributed significantly to knowledge advancement in the field of Intelligence Studies. Until recently, the U.S. government has participated in this process mainly through the CIA's Center for the Study of Intelligence, and the NDIC through its Center for Strategic Intelligence Research. In addition, the primary venue for the development of academic intelligence studies scholarship in the United States —and perhaps the world—is the International Studies Association's Intelligence Studies Section (ISA/ISS). ISA/ISS, created in the mid-1980s by those in academia who study and teach intelligence, is where much of the intelligence studies literature is being developed and presented. The emphasis of ISA/ISS is on the contributions by its members and participants to the literature and scholarship on intelligence. Its members are primarily researchers or scholars (many of them active and retired professional intelligence officers and analysts) who reside in Political Science departments across the U.S., with a fair amount of participation from those in other countries, such as the United Kingdom, Israel, Canada, Sweden, and India. Currently, the ISA/ISS is engaged in an effort—as part of the broader ISA "Compendium Project"—to document all knowledge that has been thus far produced on Intelligence Studies. This involves the production of literature review essays covering twenty different topics drawn from the intelligence literature. The goal is to provide a single point of reference for scholars and graduate students who want to learn what has been written on a subject to date.

Intelligence Studies programs and departments provide the potential to centralize these efforts and push them to the next level of graduate research capability. The NDIC's new Ph.D. program in Intelligence Studies is a step in the right direction, but for Intelligence Studies to acquire its own body of knowledge, the rest of academia and its graduate capabilities must follow suit. Currently, American Military University's Intelligence Studies department is considering creating a Ph.D. program, as are a few other schools. For a complete body of knowledge regarding intelligence analysis to develop, Intelligence Studies programs must feature a Ph.D. capability, with an emphasis on contributing to, and learning from, the cumulative body of knowledge.

Within this framework, the benefits of Intelligence Studies departments in academia are threefold. First, such departments centralize knowledge about the theory and practice of intelligence as a profession, and as such can provide this knowledge to government, other

parts of academia, the news media, and other segments of society in a more structured way than has been done in the past. Second, the knowledge resident in these departments—in the form of knowledgeable professors, staffs, libraries, and the other infrastructure of the department—provides the optimal learning experience for those who want to learn more about or enter the intelligence profession. And third, the graduates of such departments—educated in the roles and responsibilities of intelligence analysts vis–à–vis other government functions, and trained in the requisite skill set—fill a need for generalist analysts that the Intelligence Community and its private sector contractors require.

The community of intelligence educators has traditionally been divided into two camps, frequently described as training versus education, or otherwise as the practitioners versus the scholars. The members of those two camps sometimes have difficulty seeing eye-to-eye on issues relating to teaching intelligence. Since professionalization entails formal practices that relate to both the knowledge and skills of prospective practitioners, as well as knowledge advancement, the professionalization framework may well provide a neutral ground where the contributions of each—the practitioner and the scholar—can be recognized and encouraged.
In the end, the professionalization of intelligence analysis will change what intelligence educators do in two different ways: they will be required to do a better job proving that the programs produce better analysts, especially if their efforts are to become a required part of the professionalization process. And they will be required to work harder at creating a cumulative literature that provides the conceptual and theoretical foundation for the emergence of a more formal and improved intelligence profession.

ARMY INTELLIGENCE.

The methods that the United States Army Intelligence Center (USAIC) uses to train the Army's intelligence analysts today.
Rapidly changing world conditions require that the Army train its intelligence analysts to correctly identify the right tactical problem when critically analyzing the varied threats and environments that its forces will encounter while conducting a wide range of operations. This study reviews the doctrinal basis for conducting analysis and then compares how the USAIC translates that doctrine into training for its analysts. Using observations from the Army's Combat Training Centers, the Battle Command Training Program and from Operation Iraqi Freedom, the study seeks to determine the adequacy of analyst performance across the Army's formations as a means of measuring the effectiveness of the USAIC training. Tracing substandard analyst performance back to the USAIC training reveals several conclusions. While the overall program of instruction seems adequate, the USAIC does not dedicate sufficient training focused solely on analysis. The USAIC has not updated its training to incorporate critical aspects of the emerging Contemporary Operational Environment, despite acknowledging the rapidly changing world conditions. Finally, USAIC training plans do not indicate any type of formal critical reasoning and creative thinking training.

ACRONYMS:
ASAS All-Source Analysis System
ASAS-RWS All-Source Analysis System--Remote Work Station
BCTP Battle Command Training Program
CALL Center for Army Lessons Learned
COA Course of Action

COE Contemporary Operational Environment
CTC Combat Training Center (JRTC, NTC)
DGDP Directorate of Graduate Degree Programs
FM Field Manual
G2 Intelligence Officer on a General Staff
HUMINT Human Intelligence
IMINT Imagery Intelligence
IPB Intelligence Preparation of the Battlefield
JMIC Joint Military Intelligence College located at Bolling Air Force Base, Military District of Washington, D.C.
JRTC Joint Readiness Training Center located at Fort Polk, Louisiana
MASINT Measures and Signatures Intelligence
MDMP Military Decision-Making Process
METT-TC Mission, Enemy, Terrain, Troops Available--Time and Civil Considerations
MI Military Intelligence
MICCC Military Intelligence Captains Career Course NCO Noncommissioned Officer
NTC National Training Center located at Fort Irwin, California vii
OBC Officer Basic Course
OC Observer-Controller
OEF Operation Enduring Freedom
OIF Operation Iraqi Freedom
OTC Officer Transition Course
S2 Intelligence Officer at a Battalion, Brigade, or Group
SIGINT Signals Intelligence
USAIC United States Army Intelligence Center

CHAPTER 1
INTRODUCTION

"**It is in these five matters that the way to victory is known.**
Therefore I say: "Know the enemy and know yourself; in a hundred battles you will never be in peril.
When you are ignorant of the enemy but know yourself, your chances of winning or losing are equal.
If ignorant both of your enemy and of yourself, you are certain in every battle to be in peril."
Sun Tzu, "The Art of War"

The Cold War period, the USAIC trained intelligence analysts using the intelligence preparation of the battlefield (IPB) process as a framework to analyze a single threat model the fictional M1A1 mechanized-armor forces, which closely resembled the real threat of the Soviet Bloc. The M1A1 threat model was well- defined and encompassed a very structured set of weapons, equipment, unit organizations, and tactics with which an analyst could determine the options available to the threat and resulting courses of action for a given situation. Since 1983, the United States Army has been involved in some dozen conventional military operations throughout the world. Of these operations, only two have been fought against a threat that resembles the M1A1 mechanized-armor threat model instructed by the Intelligence Center (Operation Desert Storm, 1991, and the initial phases of Operation Iraqi Freedom in 2003). The fall of the Soviet Union in the early 1990s and the defeat of the Iraqi military in Operations Desert Storm and Iraqi Freedom further reinforce the assertion that the Krasnovian threat model has little applicability or similarity to current threats.

With the fall of the Soviet Union and the dissolution of the bipolar world, a new environment with new threats began to emerge. The majority of the threats in this newly emerging Contemporary Operational Environment no longer conform to the M1A1 model. Lessons learned from the most current operations demonstrate that tactical intelligence analysts experienced difficulty in identifying the correct tactical problem when trying to analyze these new emerging threats. The lack of a well-defined threat in these operations presented a greater challenge for intelligence analysts to determine the threat's courses of action. Properly training intelligence analysts and equipping them with relevant and current information to identify the right tactical problem in order to decipher a variety of threats is crucial to the success of US Army operations against hostile forces as these operations depend upon a thorough understanding of that force--its doctrine, training, leadership, organization, materiel, personnel, and capabilities. From this understanding of the threat, commanders can then accurately plan and act to counter these threat intentions.

The USAIC at Fort Huachuca, Arizona, has the primary responsibility for instructing the Army's enlisted, NCO, and officer intelligence analysts in the methods to analyze threat forces to determine their intentions and potential courses of action. While the instruction is segregated by rank and is conducted by different military units and instructors, the USAIC uses a common framework to conduct the training. The USAIC relies upon the four-step IPB model to describe the environment and its effects, define the threat, and determine its courses of action. While instructing analysts, the USAIC has historically relied upon the M1A1 mechanized-armor threat model, requiring intelligence analysts to memorize its weapons, equipment, organizations, and tactics.

With the dramatic changes in the environment and threats throughout the world, the USAIC is adapting its threat model away from a singular, structured threat and focusing more on the emerging post-Cold War Contemporary Operational Environment. The rapidly emerging and fluid COE increases the importance of arming analysts with the critical reasoning and creative thinking skills that allow them to dissect complex situations, to identify the true tactical problem, and to determine the courses of action available to threats. However, the USAIC's overall course of instruction has changed little to account for this less predictable threat and environment.

This research takes into account several assumptions concerning intelligence analyst training. Professional organizations change with their environment; therefore, this study assumes that the USAIC will constantly update its analyst training to account for changes in the environment and threat. Often, USAIC training updates are in reaction to lessons being learned and observations of current operations. Intelligence analysts will synthesize these observations more rapidly and develop their own techniques and procedures for determining the courses of action for a new threat. The core competency of an intelligence analyst is to identify the right tactical problem upon which to expend analytical energy to answer questions for the commander. This research assumes that critical reasoning and creative thinking are integral to the success of identifying the right problem and then determining predictive solutions. Intelligence analysis is a subjective endeavor; it is the art of combining known facts with assertions to derive a prediction of threat intentions and actions. Analytic ability rarely results from typical instruction, as it is primarily a skill acquired through experience. While the assertion that true analytic skill can only be gained through experience does hold a certain amount of validity, this thesis focuses on the training and education of analysts so that they are more prepared to assist units as the analysts, themselves, gain experience. Finally, and perhaps the most important assumption, this study assumes that soldiers (enlisted, NCO, and officer) can be trained to become intelligence analysts; that the skills required to be an effective analyst can be developed and sharpened and are not purely

innate.

Research Questions

Having stated the purpose and importance of studying Army intelligence analyst training, the premise of this study is best articulated with the primary question: Are the techniques and tools that the US Army Intelligence Center is using to train intelligence analysis enabling the analysts to define current and future threats for their commanders?

Secondary questions derived from the primary question assist in the focusing and limiting the scope of the research by dividing the problem into manageable sections. The secondary questions are:

- What is the doctrinal basis for conducting analysis?
- How does the USAIC translate analysis doctrine into analyst training?
- How does the USAIC train intelligence analysts?
- What are the techniques and tools that the USAIC currently uses to train analysts?
- Are the current training methods, techniques, and tools meeting the needs of the combat commanders?

Tertiary questions assist in deriving better conclusions and deny the ability to assume issues and possibilities away. The tertiary questions are:

1. Does the USAIC train critical reasoning and creative thinking?

2. How does the USAIC address analyzing a new threat?

3. Does the USAIC educate analysts to understand the process of analysis?

4. Are intelligence analysts employing USAIC techniques and tools to analyze the current threat?

5. Are intelligence analysts developing their own techniques and tools to analyze the current threat?

6. Are units conducting successful operations against current threats?

7. What is the USAIC doing to incorporate the lessons learned from recent operations into its training?

Defining certain terms will assist in establishing a common understanding and comprehending material presented throughout this thesis. To ensure uniformity of understanding, these definitions are taken directly from approved Department of the Army field manuals or joint publications.

All-Source Intelligence. "Intelligence products and/or organizations and activities that incorporate all sources of information, most frequently including human resources intelligence, IMINT, MASINT, SIGINT, and open-source data in the production of finished intelligence" (FM 2-0 2002, Glossary-19).

Analysis. "The procedure for determining facts, patterns, and relationships from information about the threat and environment" (FM 2-01.3 2003, 351). "Analysis is achieved through the reduction of information to its basic components. Each of these components is then examined

to determine its nature, proportion, function, and interrelationships. In conventional analysis the analyst examines, assesses, and compares bits and pieces of raw information, and then synthesizes those findings into an intelligence product reflecting an adversary's capabilities and vulnerabilities. Most intelligence analysis is predictive in nature . . ." (FM 34-130 Draft 2000, 2-1).

Combat Information. "Unevaluated data, gathered by or provided directly to the tactical commander which, due to its highly perishable nature or the criticality of the situation, cannot be processed into tactical intelligence in time to satisfy the user's tactical intelligence requirements" (FM 2-0 2002, Glossary-21).

Combat Intelligence. "Information on the enemy's capabilities, intentions, vulnerabilities, and the environment. Analysts derive combat intelligence from the combat information they receive and analyze" (FM 2-0 2002, Glossary-22).

Course of Action. "Any sequence of acts that an individual or a unit may follow; a possible plan open to an individual or a commander that would accomplish or is related to accomplishment of the mission; a feasible way to accomplish a task or mission that follows the guidance given, will not result in undue damage or risk to the command, and is noticeably different from other actions being considered" (FM 2-0 2002, Glossary-23).

Contemporary Operational Environment (COE). "A framework for analyzing and understanding the nature of the operational environment that exists today and for the clearly foreseeable future. A composite of the conditions, circums tances, and influences that affect the employment of military forces and bear on the decisions of the unit commander. The contemporary operational environment that exists in the world today is expected to exist until a peer competitor to the United States arises. There are 11 critical variables of the contemporary operational environment: physical environment, nature and stability of the state, sociological demographics, regional and global relationships, military capabilities, technology, information, external organizations, national will, time, and economics" (FM 2-01.3 2003, 357).

Critical Reasoning. "Critical reasoning helps you think through problems. It is the key to understanding situations, finding causes, arriving at justifiable conclusions, making good judgments, and learning from the experience--in short, solving problems. Critical reasoning is an essential part of effective counseling and underlies ethical reasoning, another conceptual skill. It is also a central aspect of decision-making" (FM 22-100 1999, paragraph 4-19). The defining concept behind critical reasoning is finding or identifying the real problem. Critical reasoning integrates into the Military Decision- Making Process during its first phase (Mission Analysis), during which the commander and staff identify and define the true nature of the tactical problem. Critical reasoning is also a critical part of the fourth and fifth steps of the MDMP phase (COA Analysis (war gaming) and COA Comparison, respectively) to ensure that the solutions developed actually address the true problem. Throughout the academic and research worlds, there are many definitions for Critical Reasoning; this thesis uses the Army's doctrinal definition of critical reasoning as specified in Field Manual 22-100, Army Leadership.

Creative Thinking. "Sometimes you run into a problem that you have not seen before or an old problem that requires a new solution. Here you must apply imagination; a radical departure from the old way of doing things may be refreshing. Army leaders prevent complacency by finding ways to challenge subordinates with new approaches and ideas. In these cases, rely on your intuition, experience and knowledge. Creative thinking is not some mysterious gift, nor does it have to be outlandish. It is not reserved for senior officers; all leaders think creatively. You employ it every day to solve small problems" (FM 22-100 1999, paragraphs 4-22, 4-23). The defining concept behind creative thinking is developing new

ideas or methods to look at and solve a problem. Creative thinking integrates into the Military Decision-Making Process during its third phase (COA Development), during which the commander and staff determine unique solutions for the tactical problem. As with Critical Reasoning, there are many definitions throughout the academic and research worlds; this thesis uses the Army's doctrinal definition of critical reasoning as specified in Field Manual 22-100, Army Leadership.

Fusion.

"The combining or blending of data and information from single or multiple sources into information" (FM 2-0 2002, Glossary-26).

Intelligence.

"The product resulting from the collection, processing, integration, analysis, evaluation, and interpretation of available information concerning foreign countries or areas; information and knowledge about an adversary obtained through observation, investigation, analysis or understanding" (FM 2-0 2002, Glossary-27).
Intelligence Preparation of the Battlefield (IPB). "IPB is a systematic, continuous process of analyzing the weather, terrain, and threat in a specific geographic area for all types of operations. IPB integrates threat doctrine with the weather and terrain as they relate to the mission within a specific battlefield environment. This is done to determine and evaluate threat capabilities, vulnerabilities, and probable courses of action (COAs)" (FM 34-130 2000, vi).

Military Decision-Making Process (MDMP).

"A planning tool that establishes techniques for analyzing a mission, developing, analyzing and comparing courses of action against criteria of success and each other, selecting the optimum course of action, and producing a plan or order" (FM 5-0 2002, Glossary-10). As noted in the definitions of Critical Reasoning and Creative Thinking, the MDMP identifies the tactical problem during its Mission Analysis phase, develops a set of solutions during its Course of Action Development phase, and ensures that the selected solution is feasible, acceptable, and suitable during the Course of Action Analysis phase.

Tactical Intelligence Analyst.

A soldier holding the occupational specialty of 96B (for enlisted and NCOs) or 35D (for officers) that has graduated from the applicable USAIC entry-level analyst course and is serving at or below the corps level. "Tactical intelligence analysts determine the significance and relationship of incoming reports and message to integrate the information with the current situation. The tactical intelligence analyst assesses and evaluates the situation to determine changes in enemy capabilities, vulnerabilities and probable courses of action. The analyst prepares all-source intelligence products to support the combat commander" (Army Enlisted Job Descriptions & Qualifications 2003).
Threat. A Threat can be defined as "any force, group, person, action event, or condition that would cause a commander to fail to achieve a specified end state and thereby the mission or objective" (FM 34-130 Draft 2000, 2-1).

Delimitations

This thesis examines the effectiveness of the methods, techniques, and tools that the USAIC currently uses to train intelligence analysts for duty in tactical units. The essential element to this process is the soldier. The process by which the Army selects and accepts recruits into the intelligence analyst fields is worthy of its own thorough research study. This thesis will not address the Army's intelligence analyst selection and accession process. To properly focus this study, research concentrated on the doctrine pertaining to conducting analysis, how the USAIC translated that doctrine into training and finally, the performance of analysts throughout the Army's tactical formations. Within the US Army, intelligence analysts support a variety of units and activities at several different levels, from the strategic level organizations in the Washington, DC area through the operational level units found at the geographic Unified and Subunified Commands down to the tactical units within the Army's corps and divisions. This thesis concentrates on the intelligence analysts supporting the tactical unit commanders. While the IPB process is integral to any discussion of analysis and serves as one framework within which to conduct analysis, this thesis does not examine the IPB process itself. The doctrinal principles of IPB have been found to be sound and can be applied to all situations at all levels. The techniques and procedures for applying IPB may vary according to the mission, enemy, terrain, troops, time available, and the civil considerations (METT-TC). Similarly, this research does not address automation support to analysis in the form of artificial intelligence or the all-source analysis system (ASAS) series of computers--arguably topics for separate research efforts. While this study addresses the intellectual process of analysis--how the USAIC trains analysts to critically examine and dissect the current threat--it will not discuss the various theories of analysis such as Bayes Theorem or the Raven Paradox. The subject of this thesis is how the USAIC conducts its analyst training. This study makes a clear distinction between "training" and "education." For the purposes of this thesis, training concerns basic instruction with the intent of achieving comprehension. The USAIC trains analysts to apply the models and tools presented. Education, on the other hand, concerns advanced instruction with the intent of achieving a more thorough understanding. Doctrine does not differentiate which organizations are responsible (USAIC or units) for which level of learning. The Army's units recognize the fact that they receive an analyst with a rudimentary comprehension of analysis, and that they must train the analyst to give him the required experience with which to become an effective analyst.

Rapidly changing world conditions require that the Army train and equip its intelligence analysts with the tools and techniques to analyze the varied threats and environments that its forces will encounter while conducting a wide range of operations. The analyst's ability to correctly identify the right tactical problem and analyze threats to discern their doctrine, tactics, organization, equipment, objectives, and capabilities ultimately leads to ascertaining threat intentions and actions. This research examines the effectiveness of the USAIC methods of training analysis, thereby meeting the needs of the Army's combat commanders. To accomplish this task, the research first reviews previous and relevant research on the topic of training, educating, and developing tactical intelligence analysts. Secondly, the research examines the USAIC curriculum, programs of instruction, and doctrine to determine how the USAIC currently conducts its analyst training and education. Finally, the research scrutinizes after action reviews and operational lessons learned from ongoing combat operations in Afghanistan and Iraq as well as Combat Training Center and Battle Command Training Program exercises to ascertain and infer the effectiveness of the USAIC analyst training and education methods. The observations from professionally trained observer-controllers (OC) and unit lessons learned serve as the primary sources of data to conclude the quality of USAIC analyst training. The following "Literature Review" establishes the background

information by reviewing previous research pertaining to training tactical intelligence analysts, examining the doctrinal basis for conducting analysis followed by studying how the USAIC translates this doctrine into analyst training.

CHAPTER 2
LITERATURE REVIEW

The intent of this research study is to assist in assessing the effectiveness of the United Stated Army Intelligence Center intelligence analyst training for current and future threats that the US Army will encounter during its operations throughout the world. This thesis examines the methods that the USAIC uses to train the Army's tactical intelligence analysts – enlisted, NCO, and officer. Rapidly changing world conditions require that the Army train and equip its analysts with the tools and techniques to correctly identify the right tactical problem and analyze threats to discern their doctrine, tactics, organization, equipment, objectives, and capabilities ultimately leads to ascertaining threat intentions and actions. This necessity is underscored by the ongoing operations in Afghanistan and Iraq, where the fighting began as conventional forces closing with each other on the battlefield, but quickly devolved into a prolonged campaign against elusive, insurgent forces. The analyst's ability to correctly identify the tactical problem and analyze threats to discern their doctrine, tactics, organization, equipment, objectives, and capabilities ultimately leads to ascertaining threat intentions and actions. With knowledge of threat objectives, intentions, and capabilities, US forces can accurately plan and act to counter those threat intentions.

This research seeks to determine whether the USAIC's methods for training analysis are effective and sound, thereby meeting the needs of the Army's combat commanders. To accomplish this task, the research first reviews previous and relevant research on the topic of training, educating, and developing tactical intelligence analysts.

Secondly, the research examines the USAIC curriculum, programs of instruction, and doctrine to determine how the USAIC currently conducts its analyst training and education, to include:

1. The doctrinal basis for the instruction
2. Whether or not critical reasoning and creative thinking techniques are taught 3. Whether or not the USAIC trains or educates its analysts to understand the process of analysis

During this phase of the study, subordinate research questions focus on the detail of USAIC analyst training methods. A key component to effectively analyzing the threat and developing courses of action is critical reasoning and creative thinking. This study seeks to determine how the USAIC trains this crucial requirement of the analytic process. Similarly, the research explores the USAIC analyst training methodology to determine if the USAIC trains its analysts to understand the process of analysis versus the rote application of a standard set of rules or steps to arrive at an analytic conclusion. A key supposition of this study is that changes in both the threat and the environment in which the Army operates necessitate changes in the methods the USAIC uses to train its analysts to dissect and analyze events in this new environment.

Finally, the research scrutinizes after action reviews and operational lessons learned from ongoing combat operations in Afghanistan and Iraq as well as Combat Training Center and Battle Command Training Program exercises to ascertain and infer the effectiveness of the USAIC analyst training and education methods. The observations from professionally trained Observer Controllers and unit lessons learned serve as the primary sources of data to conclude the quality of USAIC analyst training.

Previous Research and Relevant Works

Throughout the research phase of this project, a trend revealed that there does not appear to be much material directly pertaining to the training and education of tactical intelligence analysts. The majority of what has been written about analysis deals primarily with the science of analysis--the varied models and techniques--versus the art of analysis – the skills required to synthesize, correlate, and integrate information into relevant, meaningful intelligence for commanders. Most of the scholarly publications concern the national-level intelligence community and how to choose and educate analysts for that level. As recently as May 2003, the Joint Military Intelligence College's (JMIC) Center for Strategic Intelligence Research published a collection of essays focused on capturing and sharing the best practices to select, train, and develop analysts at the national-level intelligence agencies. While the same traits and requirements exist for the tactical level, the methods of selection, analyst experience level, instruction, and scope of responsibility differ greatly. This study concentrates on the training and education of tactical intelligence analysts conducted at the US Army Intelligence Center, leaving other research studies to focus on the Army's methods of analyst selection or their experience level.

The Doctrinal Basis for Conducting Analysis

Any examination of USAIC analyst training and education begins by first reviewing the doctrine governing the intelligence field and analysis specifically. The process by which the USAIC trains its analysts is reliant upon the doctrinal basis for conducting analysis and how the USAIC translates that doctrine into training for its analysts. The US Army outlines the doctrinal basis for conducting analysis in a series of field manuals, primarily Field Manual 2-0, Intelligence; Field Manual 34-3, Analysis; and Field Manual 2-01.3, Intelligence Preparation of the Battlefield.

Field Manual 2-0 defines analysis as, "the procedure for determining facts, patterns, and relationships from information about the threat and environment" (Field Manual 2-0 2002, Glossary-19). The manual further outlines the changes to the operational environment that require focused attention when training analysts. It identifies eleven "critical variables" that assist in the comprehension of the threat and the operational environment:

(1) nature and stability of the state,
(2) technology,
(3) regional and global relationships,
(4) external organizations,
(5) economics,
(6) national will,
(7) demographics,
(8) time,
(9) physical environment,
(10) military capabilities, and
(11) information.

These variables must be viewed collectively though some will be of more importance depending upon the situation. Field Manual 2-0 specifically identifies these eleven variables as crucial to analyst understanding, "Only by studying and understanding these variables--and incorporating them into training--will the US Army be able to keep adversaries from using them against the US or to find ways to use them to our own advantage" (FM 2-0 2002, 1-4). Additionally, the manual defines the role of analysis during the military planning process by stating that: "Intelligence Preparation of the

Battlefield is an analytical tool which greatly assists the commander and staff during mission analysis" (FM 2-0 2002, 4-29). During the course of action development phase, "Analysis is a primary function in COA development. COA Development requires the analysis of the enemy's relative combat power" (FM 2-0 2002, 4-29).

Field Manual 34-3, Analysis, draft dated January 2000, is the Army's preeminent manual for analysis. The manual provides a detailed, scholarly explanation of the analysis process. The manual states that an intelligence analyst converts combat information into intelligence by following a four-step process: observation, assessment, analysis, and synthesis. The analyst first receives an observation report indicating the size of the observed threat force, the force's activity, its location, the identification of the unit (if possible), the time that it was observed, and what equipment the threat force maintained. The analyst then assesses the report to determine its significance in relation to other observation reports and what is known about the threat and environment situations. The assessment phase is subjective. To ensure this subjectivity is properly based, the analyst prepares himself with a thorough knowledge of his unit's mission, operational area, and knowledge of the threat's capabilities, past activities, doctrine, and current situation. The analyst reviews the information from the observation report using a combination of four methods:

1. Qualitative: Viewing the report objectively by determining the different elements of the situation without regard to quantity
2. Quantitative: Ascertaining the elements and measurements of the situation without regard to the quality
3. Functional: Determining how the report relates to a process or system
4. Systems-Related: Assessing the different systems related to the overall situation

Integration of each separate report is the key to achieving a comprehensive assessment of a given situation. Integration combines all of the separate assessments of this report into a cohesive and related estimate.

The process's third step is analysis, which subdivides into two components: testing a hypothesis and deduction. Armed with knowledge of his unit's mission,
informa tion concerning his unit's area of operations and a detailed awareness of the threat situation, the analyst examines observation reports and develops questions or hypotheses that attempt to explain the threat activity or a lack of activity. The analyst uses deduction to determine how the hypotheses relate to his unit's mission, the area of operations, and the threat situation. Answers to these hypotheses assist in estimating what the threat is doing and predicting the threat's future actions.

Synthesis, the fourth step, requires the analyst to fuse the separate elements regarding the observation report, the unit's mission, the area of operations and the threat situation into a single coherent, meaningful estimate which advances the analyst's situational understanding and with which the analyst can make predictions. The manual describes Step Four of the IPB process (Determine Threat COAs) as an example of synthesis, where the end product is more meaningful and important than the sum of its separate parts.

Four analytical tasks combine to make up the analysis and synthesis process:

1. Identify the problem
2. Conduct background research
3. Identify intelligence production requirements and options
4. Request information

Problem identification is perhaps the most important task--to ensure that the analyst has discerned the problem correctly and is not working an irrelevant aspect of the problem. Generally, an analyst has a working knowledge of the overall situation within which his detailed problem is a subset. Upon identifying his detailed problem, the analyst becomes

more aware of the intricacies surrounding the situation--focusing on all pertinent information. "Thorough background research is essential to successful analysis because it forms the underlying foundation upon which all analysis is conducted" (FM 34-3 2000, 2-6). This holistic approach to knowledge about a particular problem is important to ensure the analyst is cognizant of all the pertinent factors relating to the issue – this is especially important in today's operational environment where the threats are much different than those of the past and have proven highly adaptive.

Having converted the combat information observer report into intelligence and rendering an assessment, the analyst must deliver his intelligence to the Commander in a format that succinctly conveys the intelligence, but more importantly, the meaning or impact of that intelligence on the unit's mission and the threat. The final task in the analysis and synthesis process is to identify unanswered questions--gaps in information-- and coordinate to have these questions answered, either by organic units or higher headquarters.

The field manual describes a set of dynamic and interactive analytical skills. With a thorough understanding of these skills, how they relate to one another and how to apply them to any given problem, intelligence analysts can effectively arrive at predictive estimates of threat actions to support their Commanders. The analytical skills are:

1. Understanding the analytic objective--the analyst concentrates his efforts toward the desired end-state of reaching a predictive conclusion about the threat.
2. Establishing the baseline--the analyst collects and organizes the pertinent facts about a given situation or problem.
3. Formulating the hypothesis--the analyst develops hypotheses to account for any information gaps and questions resulting from a review of the baseline information regarding the environment, its effects, and the threat. The analyst ensures that his hypotheses address the correct problem.
4. Testing the hypothesis--the analyst will either confirm or deny his hypothesis by developing observable indicators that can be collected.
5. Recognizing uncertainties--an intelligence analyst's primary mission is to decrease uncertainty by confirming or denying hypotheses about the environment or threat.

The field manual provides brief descriptions of several different types of analysis, to include pattern analysis, predictive analysis, formulaic (Bayesian) analysis, psycho historical analysis, and psycholinguistic analysis.

Pattern analysis relies upon the "premise that threat COAs reflect certain characteristic patterns that can be identified and interpreted" (FM 34-3 2000, 4-12). Detailed examination of recurring threat activities assists in determining both threat tactics and practices that play a critical role in predicting future threat actions. When encountering a little-known threat force, pattern analysis often is the primary means by which the analyst develops doctrinal templates and threat models. The challenge is how quickly the analyst can build or discern the patterns. Unfortunately, this requires repeated trial and error during which the unit is at risk. Field Manual 34-3 describes pattern analysis tools in detail and offers illustrative samples. These tools include, but are not limited to coordinate register, pattern analysis wheel, activities matrix, association matrix, and link diagram.

Acknowledging that the operational environment is changing, the manual's Appendix B outlines a guide to dissecting the myriad problems encountered in stability operations. The manual cautions that this guide is not all-inclusive and should be modified to account for the actual circumstances of a given situation. Analysts must continuously apply critical reasoning and creative thinking to determine what factors apply to their problem set.

Appendix D outlines a general analytical training plan, breaking the training into three phases, encouraging practical exercises after each session. The first phase concerns basic

analysis concepts, most of which were covered in the previous chapters of the manual. Phase Two exposes the analyst to increasingly more complex analytical methods, many concerning statistical analysis techniques. The third phase integrates the techniques from Phases One and Two with the analyst applying these techniques to a combination of threat topics. The simple application of creative thinking will allow trainers to develop scenarios more relevant to the current operational environment with which they can train their analysts.

The manual's final appendix addresses the emerging "unique environments" or operational environment by identifying the trend that the majority of US military operations in the past 20 years centered on urban areas. This appendix offers a thorough method with which to analyze the urban environment.

To account for the changes in the world environment and threats, the Army modified and updated its doctrine. As a precursor to more relevant and updated manuals, the Army published several primers explaining the changes to the world environment, now named the Contemporary Operational Environment, and the variety of threats that could exist within that environment. Both the September 2001 Army Intelligence Transformation Plan and the 1997 Army Intelligence Training XXI Plan address the emerging Contemporary Operational Environment from the Intelligence perspective by highlighting the importance of intelligence analysis and defining the requirement for skilled analysts.

Analysis is an Army Intelligence core competency. It is the synthesis, correlation, and integration of information to enable commander understanding. (Army Intelligence Transformation Plan 2001, I-1)

What is required is a pool of analysts who have demonstrated expert skills in critical, creative thinking: analysts who can pull information together into common sense, correct, and relevant bottom-line judgments for the commander. The Army's intelligence training system for Army XXI must energetically embrace the development of analysts to the same degree devoted to the pursuit of technological proficiency on its systems. (Army Intelligence Training XXI 1997, 19)

FM 2-0, Intelligence, establishes the Army's doctrinal necessity to conduct analysis by stating,

One of the most significant contributions that intelligence personnel can accomplish is to accurately predict future enemy events. Although this is an extremely difficult task, predictive intelligence enables the commander and staff to anticipate key enemy events or reactions and develop corresponding plans or counteractions. (FM 2-0 2003, para 1-29)

Having stated the requirement for conducting predictive analysis, FM 2-0 separates the COE into six dimensions that affect how units plan and conduct operations and eleven critical variables, which assist in the understanding of the threat. The manual focuses attention on the importance of understanding the dimensions and variables by highlighting: "Only by studying and understanding these variables--and incorporating them into training--will the US Army be able to keep adversaries from using them against the US or to find ways to use them to our own advantage" (FM 2-0 2002, 1-4). Analyzing the threat and developing courses of action is an exercise in problem solving. The most crucial component of the process is correctly identifying the right tactical problem; hence the pivotal importance of Critical Reasoning. Having identified the true tactical problem, the analyst utilizes Creative Thinking to determine the threat's potential courses of action. Finally, Critical Reasoning is used again to ensure that the selected COAs are feasible, acceptable, and suitable.

The Army's primary methodology or tool used to analyze tactical problems is the Military Decision Making Process; the intelligence subset of this process is Intelligence Preparation of the Battlefield (IPB), explained in detail in Army Field Manual 2-01.3, Intelligence Preparation of the Battlefield. IPB is the systematic, continuous process of analyzing the weather, terrain, and threat in a specific geographic area for all types of operations. It

integrates threat doctrine with the weather and terrain as they relate to the mission within a specific battlefield environment. This is done to determine and evaluate threat capabilities, vulnerabilities, and probable courses of action (COAs) (FM 34-130 2000, vi).

The current IPB manual realizes the critical changes to the operational environment (OE):

Evaluating the enemy has changed dramatically in the OE. We will no longer face a monolithic enemy. In today's world, the US Army must be prepared to go into any operational environment and perform its full range of missions. It must be ready to do so in the face of a wide variety of possible enemies and at the same time be prepared to deal with third-party actors that may have other interests. Not all enemies are purely military in nature. (FM 2-01.3 2003, para. 1-4)

The IPB manual recognizes that additional techniques and tools are required to analyze the different threats in the COE and provides examples of additional analytical methodologies (such as time event charts, activity and association matrices, and link diagrams), which can be used to assist in determining threat courses of action. These supplemental techniques are especially relevant to the lesser-defined threats prevalent in many areas of the world today.

The ultimate purpose of the IPB process is to provide commanders with an estimation of the threat's capabilities, vulnerabilities, and all available courses of action. Threat courses of action are ascertained by determining threat force capabilities and the doctrinal principles and tactics, techniques, and procedures threat forces prefer to employ for a given situation. The desired end state is that analysts and commanders understand how the threat will normally execute operations and how they have reacted to similar situations in the past. FM 2-01.3 describes determining the enemy course of action in five steps:

1. Analyze relevant combat power
2. Generate options
3. Array initial forces
4. Develop the scheme of maneuver
5. Prepare ECOA statements and sketches

All of these steps require that analysts possess critical reasoning and creative thinking skills and a thorough understanding of tactics to be successful at determining threat courses of action and then effectively presenting them to their commanders. This is further reinforced by Command Sergeant Major Vivian Diaz and Sergeant First Class (Retired) Michael Ray in their October 1999 article concerning Army NCO analyst training in which they identified the need for changing the methods of analysis instruction.

The traditional Instructional Systems Design approach emphasizes identifying skills to be learned and applying a hierarchy of subskills to support terminal learning objectives in a linear, "step-by-step" process. That approach has served us well over the years, but it is too limited to support the training environments necessary to encourage cognitive flexibility, conceptual thinking, and creative decision-making.

Our training strategy will foster critical and adaptive thinking. This kind of thinking involves analysis, synthesis, evaluation, and most importantly, imagination in solving problems and developing courses of action.

NCOs must be able to think critically and creatively, they need to perceive problems in terms of potential solutions. (Diaz and Ray 1999, 4)

In 2000, the USAIC determined that it must modify its methods of instruction to produce an analyst that thinks critically, can creatively determine courses of action for a little-known threat and is mentally adaptable and agile to face the COE threats. In the fall of 2000, the USAIC Deputy Commandant, Brigadier General Richard Quirk III, acknowledged that: "The intelligence soldier of tomorrow will require a professional education. . . . This expertise, this breadth and depth to cover whatever emerges in the world, can come only from education" (Quirk 2000, 30). In the summer of 2002, the USAIC Academic Dean, Dr. George Van Otten,

recognized that

The contemporary operational environment (COE) has far-reaching implications relative to the focus, organization, and methods of military intelligence (MI) instruction and education. It is no longer appropriate for instructors to rely on Soviet-style doctrine, concepts, and equipment as the foundation for the development of lesson plans, exercises, and instructional materials. (Van Otten 2002, 33)

Based upon his lengthy career and his most recent experiences as a senior Army commander in Bosnia and Kosovo, retired General Montgomery Meigs agrees with Diaz, Van Otten, and Quirk when writing his summer 2003 article concerning asymmetric warfare:

We must incorporate unorthodox thinkers who probe constantly for the unique and peculiar danger or method of access. This kind of training should be part of the professional development of our planners and commanders. We need to build into the system thinkers who ask the question no one else considered or dared to ask. (Meigs 2003, 14)

The current Director of Central Intelligence, George J. Tenet, summed it up the best in a May 2000 dedication speech, when he defined the requirements for his (and all) intelligence analysts:

In our [DI] it is not enough just to make the right call. That takes luck. Our analysts have to make the right call for the right reasons. That takes expertise. It is expertise – built up through study and experience- that combines with relevance and rigor to produce something that is very important: insight ... Our analysts blend a scholar's mastery of detail with a reporter's sense of urgency and clarity. At its best, the result is insight. And it is insight that wins the confidence of our customers and makes them want to read our publications and listen to our briefings. (Tenet 2000)

Several experienced intelligence leaders and commanders as well as the USAIC, itself, have determined that analysts require critical and adaptive thinking skills to properly analyze the threats in the COE. This portion of the Literature Review seeks to determine how the US Army Intelligence Center translates the analysis doctrine into its training methodology and techniques to analyze a tactical situation. Information available from the USAIC details how the Center conducts analysis training for each of its courses.

How the USAIC Translates Doctrine into Analyst Training As the Army and the USAIC began to define the emerging operational environment, the USAIC determined that:

What is required is a pool of analysts who have demonstrated expert skills in critical, creative thinking. The Army's intelligence training system for Army XXI must energetically embrace the development of analysts to thesame degree devoted to the pursuit of technological proficiency on its systems. (Intelligence Training XXI 1997, 19)

The USAIC revised its training methodology to reduce the amount of pure platform lecture instruction and increase student exercise time. It also determined that it needed to, "Structure 96B training around analytical thinking" (Intelligence Training XXI 1997, 27).

The USAIC takes the general intelligence doctrine and that of how to conduct analysis and translates them into training and education for its analysts. The purpose of any training and education endeavor is to attain a desired end state, as exhibited by the USAIC training objectives and terminal learning objectives for its various analyst courses. The USAIC developed a multitiered training and education program that delineates the quantity and type of training entry-level soldiers receive (privates and lieutenants) as opposed to the advanced education that the midlevel soldiers receive (captains and NCOs). This study analyzes the training objectives and missions, the course structure, and course content for each of the USAIC analyst courses to determine if it meets the requirements set out in the USAIC 1997 training plan and the doctrinal manuals concerning analysis.

Enlisted Advanced Individual Training. During this course, intelligence analysts focus on developing basic skills in symbology, database operations, and map reading. The course

introduces analysts to intelligence automation systems such as ASAS and the RWS. Throughout their training, analysts develop skills to evaluate situations, develop threat courses of action, develop intelligence requirements, coordinate intelligence collection to support the commander, and produce intelligence products to support the decision-making process. During their training, analysts spend twenty-six days learning basic intelligence requirements, such as map reading, military symbology, and intelligence preparation of the battlefield. Analysts receive training on research and briefing skills, event templating, collection management, situation development, and stability operations during their twenty-eight day advanced phase. Analyst training concludes with a twenty-five day block of instruction dedicated to training on the ASAS intelligence processing system. Enlisted intelligence analyst training includes approximately five days of instruction concerning "analysis" (96B Course Introduction 1998, slides 9-11).

Military Intelligence Officer Basic Course (OBC).

The course states that its overarching training mission is to "train Military Intelligence 2LTs to become proficient Analysis Control Team (ACT) Chiefs, Battlefield Intelligence Collection Coordinators (BICCs), and Platoon Leaders" (USAIC Officer Education System 2003, slide 8). OBC accomplishes this through a series of formal blocks of instruction and training on intelligence topics, followed by associated practical exercises and a final collective exercise. MI lieutenants receive instruction on intelligence preparation of the battlefield (six days), stability operations and support operations (five days), the military decision- making process (16 days), and crisis action planning (three days). Analysis is an inherent component to these blocks of training. While a specific block of instruction regarding "How to Conduct Intelligence Analysis," is not an official portion of the curriculum, it is reasonable to assume that the instructor imparts analytical techniques, though probably not in the detail of an actual class on "Analysis."Officer Transition Course (OTC). The OTC training mission is to provide tactical intelligence qualification training for newly branched company grade MI officers. OTC accomplishes this through a series of formal blocks of instruction and training on intelligence topics, followed by associated practical exercises and a final collective exercise. MI transition officers receive instruction on the Military Decision Making Process, the Intelligence Cycle, Intelligence Preparation of the Battlefield, Threat courses of action, analysis processing, collection management, and targeting.
A two-hour block of instruction focused specifically on "Analysis Processing," encapsulates the basic tenets of conducting analysis. This analysis training is then reinforced in subsequent training blocks and exercises. Referring to Field Manual 34-3, the instruction states that intelligence processing is separated into three distinct phases: recording, evaluation, and analysis. The instruction outlines different methods of recording the incoming information to ease the evaluation and analysis processes. Evaluation seeks to ascertain the pertinence, reliability, and credibility of the information. The final phase, analysis, results from assessment, integration, and deduction. Having outlined the components of analysis, the instruction demonstrates how to apply the components to a given situation.
1. Analyze the message by examining it at face value then by extracting what it implies based upon the analyst's knowledge of the threat situation.
2. Once the message is recorded, the analyst identifies any patterns of activity.
3. Compare the reported information to the threat's doctrine, tactics, techniques, and procedures.
4. From this analysis, the analyst should then use his knowledge of the threat to determine its intent and battlefield organization including unit boundaries, committed forces, and reinforcements (MI Officer Transition Course Lesson Plan – Processing 2000, slides 12-14).

MI Captains Career Course (MICCC).

MICCC states that its overarching training mission is to "train Military Intelligence CPTs to become proficient S2s, ACE Battle Captains, and Company Commanders" (USAIC Officer Education System 2003, slide 9). MICCC accomplishes this through a series of formal blocks of instruction and training on intelligence topics, followed by associated practical exercises and a final collective exercise. MI captains receive training on Intelligence Support to Brigade Operations (thirty-one days) and Intelligence Support to Division and Corps (twenty days). As with the Officer Basic Course, analysis is an integral component to the practical exercises for these blocks of training. While a specific block of instruction regarding "How to Conduct Intelligence Analysis," does not exist in the curriculum, it is reasonable to assume that the instructor imparts analytical techniques, though probably not in the detail of an actual class on "Analysis."

Throughout analyst training, the USAIC relies upon several methods to determine the effectiveness of its training and education. The first mechanism, testing, occurs during analyst training and resides within each particular block of instruction (or class). At the end of each major block of instruction, the analysts are tested to determine comprehension and retention; if an analyst fails to demonstrate comprehension, the instructors conduct retraining. The second mechanism, an analyst supervisor survey, occurs after the analysts leave the USAIC and join their units. The USAIC sends surveys to the analyst supervisors six months after graduation. The short surveys query analyst supervisors about their performance in the unit. The USAIC reports up to a 75 percent response rate from the supervisors. The USAIC then takes these results and briefs them at Quarterly Training Briefs presumably to determine the effectiveness of their training and propose changes to account for analyst deficiencies (111th MI Brigade Command Brief 2003, 37). The third mechanism, lessons learned teams, was demonstrated when Major Dan Corey's USAIC survey team visited units to gather lessons learned and initial impressions of how the intelligence system and analysts were performing during Operation Iraqi Freedom.

"Analysis," will compare and contrast the doctrinal explanation of analysis and the USAIC training methods.

Past research has focused little on the actual process and methods for the training and education of tactical intelligence analysts. However, current assessments of analyst performance during recent combat operations indicate that intelligence analysts are not providing their commanders with the estimates of enemy forces and actions required to conduct decisive operations to defeat the enemy. This research project seeks to address this gap in knowledge by examining the effectiveness of the USAIC methods for training and educating the Army's tactical intelligence analysts. To determine the effectiveness of USAIC training methods, this thesis will first determine the current methods being used at the USAIC to train and education analysts. The efficacy of these current training and education methods will be established largely based upon the insights of professional observers and unit lessons learned during combat operations and Combat Training Center and Battle Command Training Program exercises. The following chapter will explain in detail how this research approaches the task of examining the effectiveness of USAIC intelligence analyst training and education methods.

CHAPTER 3
RESEARCH METHODOLOGY

The intent of this research study is to assist in assessing the effectiveness of the United Stated Army Intelligence Center intelligence analyst training for current and future threats that the US Army will encounter during its operations throughout the world. This thesis examines the methods that the USAIC uses to train the Army's tactical intelligence analysts--enlisted, NCO, and officer. Rapidly changing world conditions require that the Army train and equip its analysts with the tools and techniques to correctly identify the tactical problem when critically analyzing the varied threats and environments that its units will encounter while conducting full spectrum operations. This necessity is underscored by the ongoing operations in Afghanistan and Iraq, where the fighting began as conventional forces closing with each other on the battlefield, but quickly devolved into a prolonged campaign against elusive, insurgent forces. The analyst's ability to correctly identify the right tactical problem and analyze threats to discern their doctrine, tactics, organization, equipment, objectives, and capabilities ultimately leads to ascertaining threat intentions and actions. With knowledge of threat objectives, intentions, and capabilities, US forces can accurately plan and act to counter those threat intentions.

This research seeks to determi ne whether the USAIC's methods are effective and sound, thereby meeting the needs of the Army's combat commanders. This thesis breaks this process down into three distinct phases. Phase One determined the doctrinal basis for conducting analysis. Phase Two studied the USAIC curriculum and programs of instruction to determine how the USAIC translates the analysis doctrine into training and education for its analysts. Information gathered from the Intelligence Center addresses training objectives, methods, and instructional techniques. This information establishes the baseline for any comparison of method effectiveness. These first two phases reside in Chapter 2, "Literature Review."

After establishing the doctrinal and training/education plans in the "Literature Review," this chapter examines the adequacy of analyst performance in the Army's combat units to determine if the current USAIC training methods effectively meet the needs of the Army's combat commanders by scrutinizing after action reviews and lessons learned from ongoing combat operations in Afghanistan and Iraq as well as Combat Training Center and Battle Command Training Program exercises to ascertain and infer the effectiveness of the USAIC analyst training and education methods. The observations from professionally trained Observer Controllers and unit lessons learned serve as the primary sources of data to conclude the quality of USAIC analyst training. Subordinate questions for this phase support a more comprehensive determination of the effectiveness of the USAIC training. One means of determining the effectiveness of USAIC training is whether analysts employ those tools and techniques taught at the USAIC or if they develop their own techniques to analyze the threat. Likewise, another method of ascertaining the effectiveness of USAIC training is if military units require additional training to bring analysts up to a certain standard to suitably support their combat commanders.

Analyst Performance in Combat Units

This chapter represents the "real world" case of analyst training put to the test while executing operations. Examining a single example fails to provide the opportunities and data required to adequately and justly analyze the effectiveness of USAIC analyst training; therefore, this chapter is a compilation of trend analysis conducted by the Center for Army Lessons Learned (CALL) based upon Combat Training Center (Joint Readiness Training Center and National Training Center) trend publications, the Battle Command Training Program (BCTP) trend publications, CALL lessons learned articles and operational lessons learned from the ongoing Operations Enduring Freedom and Iraqi Freedom. For the purposes of differentiating between training and combat operations, the observations are divided to

form two case studies: the Combat Training Center (CTC) and BCTP observations form the first case study while the observations and lessons learned from Operations Enduring Freedom and Iraqi Freedom form the second case study.

Case Study One: Combat Training Centers and BCTP Observations Thesis research surveyed and compiled all available observations from the

Army's US-based CTCs--the Joint Readiness Training Center (JRTC) in Louisiana, and the National Training Center (NTC) in California--and the Army's BCTP, which exercises and evaluates the Army's division and corps commanders and staffs. CTC information represents that which the Army has compiled and stored on the CALL website since late 1994. This information equates to approximately 160 unit rotations based upon a formula of ten unit rotations at each center per year. BCTP information represents that which the Army has compiled and stored on the CALL website since 1995. This information reflects yearly trend analysis based upon its exercises schedule for that year.

CTC and BCTP trends indicating that intelligence analysts fail to assist commanders and staffs in visualizing and analyzing the threat and the effects of the battlefield environment on the unit. When describing the threat, intelligence analysts often failed to portray an integrated combined arms threat. Compounded by the omission of basic threat information such as desired end state, objectives that support the end state, purpose, intent, centers of gravity, and high value targets, intelligence analysts were not able to portray the proper threat for units to plan against. Attempts at visualizing and portraying the threat in stability operations and operations in urban environments challenged analysts to conduct a thorough assessment of threat courses of action. BCTP exercises provide an example of the impact of incomplete analysis. From 1996 through 2000, BCTP's annual trend report noted that analysis did not routinely consider threat intentions or decision points. After five years, units reversed this trend as indicated in BCTP's 2001 and 2002 annual trend reports.

Providing Commanders and staffs with timely and relevant information proved difficult for intelligence analysts due to their inability to supply detailed predictive analysis. CTC OCs noted that intelligence analysts usually utilized one or two of the pattern analysis techniques when attempting to identify threat activity trends and perform predictive analysis instead of combining the information and effects from all of the pattern analysis tools. This lack of predictive analysis amplifies the uncertainty when intelligence analysts do not analyze information prior to disseminating it to the Commander, staff, and unit.

Case Study Two: Operations Enduring Freedom and Iraqi Freedom Observations The Army's official history of Operation Iraqi Freedom, On Point, describes how:

The Army's tactical intelligence system did not produce for tactical units the kind of timely intelligence that would have enabled discrete shaping operations followed by deliberate decisive operations. Instead, every brigade commander interviewed asserted they fought movements to contact. (On Point 2003, Transition chapter, page 5)

This remark is more critical of the theater- and national-level intelligence organizations for their lack of providing the intelligence that combat commanders at all levels required to plan and execute operations. This issue most likely stemmed more from a lack of information distribution to the combat commanders with which their soldiers could conduct analysis. Similarly, Major Dan Corey noted in his report, "Operation Iraqi Freedom Study Group: Intelligence Battlefield Operating System Initial Observations" that intelligence analysts failed to provide their Commanders with predictive analysis when he remarked "analysis did not define the paramilitary threat in a way that commanders would understand its operational and strategic implications" (Corey 2003, 7). This is also more indicative of a failure of the theater- and national-level intelligence organizations to recognize the importance of the paramilitary threat. Corey also determined that training standards such as the CTCs and BCTP impart a false sense of reality to analysts and commanders in terms of unrealistic

expectations of near-perfect intelligence and the over-mitigation of uncertainty (Corey 2003, 30).

In his report, "Observations from Operations Iraqi Freedom and Enduring Freedom," Lieutenant Colonel Robert Chamberlain collected observations from units engaged in Operations Iraqi Freedom and Enduring Freedom, providing relevant and timely insights to the performance of analysts in an environment where the threat was not well defined. Interviews of military intelligence and maneuver commanders disclosed that they thought junior military intelligence officers (lieutenants) and enlisted analysts (private through specialist) were equipped to handle the challenges of tactical assignments and that they demonstrated minimal analytical skills. As an experienced OC, LTC Chamberlain was able to add his own personal observations to those of the field commanders:

The trend that we observed during OIE and OEF was that lieutenants, who have been serving in units for 6-8 months, and E-1 thru E-4 96Bs appeared not to be prepared for tactical assignments. Captains, serving as battalion S2s, generally possessed the skill needed to be an S2, but lacked any advanced analytical capabilities. (Chamberlain 2003, 5).

- Officers and 96Bs: Very little to no analytical skills. This is also a trend that we have observed at the CTCs for the past ten years.
- Officers and 96Bs: Do not understand their role in the MDMP. This was extremely evident during the COA development and the war gaming process. (Chamberlain 2003, 6)

Adding to the problem of officers and enlisted soldiers not possessing basic analytical skills, LTC Chamberlain's observations confirm past CTC trends that intelligence officers and analysts did not seem to understand their role in the MDMP, particularly in the COA development and war gami ng processes. From his position as the Senior Intelligence OC at JRTC, the author stated this was a trend seen at the CTCs over the last ten years. Unfortunately, the report does not address analytical skill shortcomings in any detail. The author's only recommendation in this regard is to "strengthen the foundation of the junior intelligence soldier's education" (Chamberlain 2003, 6).

The crucial requirement for analysts to constantly use critical reasoning and creative thinking was highlighted by the First Marine Division G2 in his report "Operation Iraqi Freedom Lessons Learned" in which he observed that, "When the enemy 'failed' to act in accordance with common military practice, we were caught flat- footed because we failed to accurately anticipate the unconventional response" (1st Marine Division G2 2003, 9). CALL identified a similar Army requirement in its Operation Iraqi Freedom Study Group Report by recommending that

Junior leaders must be placed in positions and situations where there is sufficient ambiguity to make them respond with something other than the "text book" solution. These situations will require innovative solutions and risk taking and their mistakes must be underwritten. (On Point 2003, Transition chapter, page 2)

The report identifies the ineffectiveness of the Army's tactical intelligence system to provide timely and relevant intelligence that units could act on to execute operations. Every brigade commander interviewed by the Study Group noted that they fought movements to contact versus seeing and understanding the enemy first so that their units could act first to finish the enemy off decisively. The Study Group asserts,

The Army systems in place now are based on a process to prepare the battlefield that starts from an understanding of the enemy's doctrine and how they intend to fight. That system will remain useful against conventional forces, but must be adjusted to accommodate a rapidly adapting enemy who seeks to avoid generating detectable patterns. (On Point 2003, Transition chapter, page 5)

It is worth mentioning that the Study Group concluded that the Contemporary Operational Environment is valid and on target, based upon the enemy actions observed in Iraq.

Phase Three represents the "real world" case of analyst training put to the test while executing operations. Providing a compilation of trend analysis based upon CTC, BCTP, and operational lessons learned offers a balanced, in-depth view into what is, in effect, the ultimate test of USAIC intelligence analyst training effectiveness. This chapter opened by outlining the doctrinal approach to conducting intelligence analysis, as defined in the Army's preeminent manual--Field Manual 34-3, Analysis. Next, the research reviewed how the US Army's Intelligence Center translates analysis doctrine into actionable training. Finally, this section of the research presented a comprehensive trend assessment as a means to demonstrate the effectiveness of USAIC intelligence analyst training. The following chapter examines the information to derive conclusions about the subordinate research questions that in turn lead to addressing the effectiveness of USAIC analyst training.

CHAPTER 4 ANALYSIS

Tell me what you know;
Tell me what you don't know;
Tell me what you think - in that order.

Colin Powell, General (Ret.)

The intent of this research study is to assist in assessing the effectiveness of the United Stated Army Intelligence Center intelligence analyst training for current and future threats that the US Army will encounter during its operations throughout the world. This thesis examines the methods that the USAIC uses to train the Army's tactical intelligence analysts--enlisted, NCO, and officer. Rapidly changing world conditions require that the Army train and equip its analysts with the tools and techniques to correctly identify the right tactical problem when critically analyzing the varied threats and environments that its forces will encounter while conducting full spectrum operations throughout the world. This necessity is underscored by the ongoing operations in Afghanistan and Iraq, where the fighting began as conventional forces closing with each other on the battlefield, but quickly devolved into a prolonged campaign against elusive, insurgent forces. The analyst's ability to correctly identify the true tactical problem and analyze threats to discern their doctrine, tactics, organization, equipment, objectives, and capabilities ultimately leads to ascertaining threat intentions and actions. With knowledge of threat objectives, intentions, and capabilities, US forces can accurately plan and act to counter those threat intentions.
This can only be accomplished by further dissecting the main research topic into secondary and tertiary questions which, when answered, will provide the details necessary to conclude an answer to the primary research question.
The secondary questions approach the problem by seeking to determine:
1. The process by which the USAIC trains its intelligence analysts
2. The content of the training in terms of techniques and tools
3. And finally, how well the intelligence analysts perform once in their units
This chapter of the thesis takes the information gathered in the "Literature Review" and structured in the "Research Design," then analyzes how well the current information answers the research questions in order to draw conclusions in the following chapter. By comparing how the USAIC translates the doctrinal basis for analysis into training and then assessing the effectiveness of this training by reviewing observations from on-going operations and exercises, this thesis establishes the analysis upon which conclusions and recommendations will be made in the next chapter.
Doctrinal Basis for Conducting Analysis

The doctrinal basis for conducting analysis appears sound and complete. The three primary manuals concerning analysis offer a comprehensive exposition of the problem by identifying the emerging operational environment, categorizing critical variables that must be accounted for in this new environme nt and then offering a detailed explanation of how to conduct analysis.

As the Army's overarching intelligence doctrinal publication, Field Manual 2-0, Intelligence, identifies eleven critical variables that it emphasizes, "Only by studying and understanding these variables--and incorporating them into training--will the US Army be able to keep adversaries from using them against the US or to find ways to use them to our own advantage" (FM 2-0 2002, 1-4). A review of the USAIC instructional material does not indicate that it has incorporated these critical variables into its analyst training programs of instruction.

Field Manual 34-3, Analysis, explains the process for conducting analysis in great detail. While it does provide illustrative examples of certain steps during the analytic process, it does not provide an example of conducting analysis for a problem in the new operational environment. The manual's appendices identify the emerging operational environment and offer a guide to dissecting the problems encountered in this new environment. One appendix even provides a general analyst training plan. The USAIC does not appear to use this general training plan appendix as a guide on how it constructs its training or the content within that training. Overall, the doctrine within FM 34-3, Analysis, remains valid even in the emerging Contemporary Operational Environment. While the environment is changing and the threats multiplying and adapting, there is not anything so radically different in the COE that it requires a change to the manner in which the Army conducts analysis. That being said, the emerging COE and adapting threats require analysts to look at problems from many different levels (a tactical intelligence analyst may have to determine the threat's strategic goal in order to determine its tactical capabilities and options), from different points of view and to review their knowledge and reported information in more detail. How the USAIC Translates Doctrine into Analyst Training

Having reviewed the doctrinal basis for conducting analysis, the next step is to determine how the USAIC developed its training methodology in order to train analysts. This research also reviews the content of the USAIC training. Analyzing the threat and developing courses of action is an exercise in problem solving. The most crucial component of the process is correctly identifying the right tactical problem; hence the pivotal importance of Critical Reasoning. Having identified the true tactical problem, the analyst utilizes Creative Thinking to determine the threat's potential courses of action. Finally, Critical Reasoning is used again to ensure that the selected COAs are feasible, acceptable, and suitable. Similarly, this research explores if the USAIC trains its analysts to understand the process of analysis (education) versus training analysts to simply apply a standard set of rules or steps to arrive at an analytic conclusion (training).

All of the four analyst-producing courses studied have as their training objective to train soldiers to become proficient "analysts"--be that an enlisted analyst, an Analysis Control Team chief, a unit S2 Intelligence Officer or an Analysis, and Control Element Battle Captain. The courses accomplish this objective through a series of introductory lectures followed by practical exercises and a final exercise integrating the separate blocks of instruction into one overarching scenario. The primary differences between the courses revolve around instruction specifically dedicated to "analysis" and the amount of time allocated to the different training topics.

The Enlisted soldier Advanced Individual Training and the Officer Transition Course offer specific blocks of formal instruction concerning analysis. The Enlisted training provides five days of dedicated analysis training, while the Officer Transition Course dedicates eight hours

to analysis training. These results seem reasonable based upon the different education and experience levels of the soldiers involved.

The most unexpected finding was the lack of any dedicated analysis training for the Officer Basic Course students. With the Officer Basic Course being a young officer's first introduction into the intelligence field, it seems unwise to omit training dedicated to the conduct of analysis. It is reasonable to assume that instructors informally offer students some direction on how to conduct analysis throughout the execution of the other training and exercises. This method does not seem to be an appropriate procedure for conducting crucial analytical training to any type of standard, especially in light of the course training objectives to prepare these young officers for positions in combat units. The lack of standardized analysis training exacerbates any instructor proficiency shortcomings, as the instructors present what they view as important regarding analysis.

Likewise, the Military Intelligence Captains Career Course does not offer any formal training on analysis, probably based upon the assumption that the entry-level courses (Officer Basic Course and Officer Transition Course) have accomplished this task. At the very least, it seems as though the USAIC misses an opportunity to refresh mid-level officers concerning analysis by reviewing the standards and introducing any new developments in the field. At the other extreme of the spectrum, if the USAIC intends to make an professional investment in its emerging mid-level leaders and analysts, the USAIC is neglecting to further educate them on the art of conducting analysis so that these mid-level analysts can carry their knowledge forward and impart it to the younger, less experienced analysts serving the Army's commanders. Another research discovery was the lack of Military Decision-Making Process (MDMP) training for the Enlisted Advanced Individual Training analysts. All other analyst training courses provide instruction on how the intelligence analyst and intelligence cycle integrate into the MDMP. Training enlisted analysts on purely intelligence-related topics without demonstrating how they and their products integrate into the greater staff planning process does not seem reasonable. This could account for some of the observations noted below in the analyst performance section.

Common to all the analyst courses was the lack of any critical reasoning or creative thinking training. In 1997, the Intelligence Center created its Intelligence Training XXI plan to meet the training challenges for the emerging operational environment. One of its key concepts was that, "What is required is a pool of analysts who have demonstrated expert skills in critical, creative thinking" (Intelligence Training XXI 1997, 19). This was further emphasized in a 1999 article written by Command Sergeant Major (CSM) Vivian Diaz and Sergeant First Class (SFC) (Retired) Michael Ray in which they identified a critical characteristic for intelligence analysts to be that they "be able to think critically and creatively, they need to perceive problems in terms of potential solutions" (Diaz and Ray 1999, 4). CSM Diaz and SFC Ray outlined a training strategy designed to promote critical reasoning and adaptive thinking.

While the Intelligence Center recognized the requirement to develop critical reasoning and creative thinking skills in its analysts, it is not readily evident in their current training strategies or methods. Neither is it apparent that the USAIC attempts to teach its analysts to understand the process of analysis versus simply executing a checklist of steps required to conduct analysis. One aspect of confronting the Contemporary Operational Environment (COE) concerns the emphasis on technology solving the challenges of the COE. While much attention has been given to the materiel solutions and the associated research, development and fielding of equipment to meet the challenges of the Contemporary Operational Environment, the complexities of training have not been fully addressed. The Enlisted Advanced Individual Training offers an example of where technology training possibly supercedes analyst training. The enlisted training consists of three phases totaling seventy-

nine training days, twenty-five of which are dedicated to training the analysts on the ASAS computer.

Analyst Performance in Units

Observations from units involved in current operations, Combat Training Center rotations and Battle Command Training Program exercises provide the greatest insight into intelligence analyst training effectiveness. These observations indicate that analysts at all levels fail to provide the necessary support to their commanders and staffs in two major areas:

1. Failing to assist the commanders and staffs visualize the environment and the threat
2. Failing to provide predictive analysis during planning and operations

The observations concerning visualizing the environment/battlespace and threat focus on the failure of intelligence analysts to properly analyze and describe the effects of terrain and weather on both the friendly and threat forces, and analysts failing to provide a complete description of how the threat will fight. The observations concerning the lack of predictive analysis can be explained by the fact that most intelligence analysts relied upon the analysis of their higher headquarters without tailoring it for their unit or area of operations, in addition to failing to utilize all the tools and techniques that assist in predictive analysis.

There are several potential causes for the intelligence analyst inability to describe the effects of terrain and weather on both the friendly and threat forces. While analysts do receive instruction on terrain and weather effects as part of Intelligence Preparation of the Battlefield, the instruction often consists of referencing standard data tables and matrices that indicate general effects on standard units. These tables and matrices are merely a guide to assist in determining the actual effects on a unit. Analysts tend to limit themselves to the information in these charts without extrapolating the data on the charts and applying it to the overall effects on their unit course of action and that of the threat. In this regard, analysts fail to critically reason through the complete problem to arrive at the overall effects of terrain and weather on their units and the threat. Additionally, as the operational environment and the threat continue to change, the importance of applying creative thinking to such circumstances is crucial to the ability of analysts to remain predictive. Experience cannot be overlooked as a significant contributing cause to the inability of analysts to describe the effects of terrain and weather on both friendly and threat forces and to render predictive analysis. Lacking a basic foundation in the principles of combat coupled with the lack of opportunity at the USAIC to gain basic experience places most new analysts at a disadvantage when arriving at their first unit. Experience provides a solid foundation from which analysts can apply critical reasoning and creative thinking to the problems at hand. This issue lends itself to further research concerning the accession of soldiers as intelligence analysts.

During their Intelligence Preparation of the Battlefield instruction, analysts also receive instruction on how to properly describe a course of action in terms of the threat's goals, centers of gravity, decisive points, his strengths and weaknesses, his capabilities, and vulnerabilities, how the threat will fight all of his resources and potential reactions to the evolving situation. All of this information is judgmental in nature, requiring critical reasoning, creative thinking, and experience to determine the proper answers. What the USAIC instruction does not provide are different techniques for reducing the uncertainty of these judgments so that analysts can develop threat information that is feasible, acceptable, and suitable for a given situation. Doctrinally, the manuals and processes include the information and techniques necessary for analysts to succeed at their task. Educationally, critical reasoning and creative thinking assist in bridging this gap in analyst capability.

Two factors influence why intelligence analysts rely so heavily upon the analysis of their higher headquarters without tailoring it for their unit or area of operations. As with determining the effects of terrain and weather on their unit, intelligence analysts often do not know how to extrapolate and infer the implications of the analysis provided by a higher headquarters to their situation. Secondly, analysts fail to utilize all the tools and techniques that assist in predictive analysis. Observers reported analysts using one or two of the predictive analysis tools such as pattern analysis wheels and association matrices; however, these examples only provide a portion of the information required to conduct predictive analysis. Analysts must combine the information from all the tools and techniques in order to provide solid predictive analysis. A thorough understanding of the analysis process and a solid grounding in critical reasoning and creative thinking is required for analysts to succeed in the new operational environment.

This chapter of the thesis takes the information gathered in the "Literature Review" and structured in the "Research Design," then analyzes how well the current information answers the research questions in order to draw conclusions in the following chapter. By comparing how the USAIC translates the doctrinal basis for analysis into training and then assessing the effectiveness of this training by reviewing observations from on-going operations and exercises, this thesis establishes the analysis upon which conclusions and recommendations will be made in the next chapter.

CHAPTER 5
CONCLUSIONS AND RECOMMENDATIONS

The intent of this research study is to assist in assessing the effectiveness of the United Stated Army Intelligence Center intelligence analyst training for current and future threats that the US Army will encounter during its operations throughout the world. This thesis examines the methods that the USAIC uses to train the Army's tactical intelligence analysts--enlisted, NCO, and officer. Rapidly changing world conditions require that the Army train and equip its analysts with the tools and techniques to correctly identify the right tactical problem when critically analyzing the varied threats and environments that its forces will encounter while conducting full spectrum operations throughout the world. This necessity is underscored by the ongoing operations in Afghanistan and Iraq, where the fighting began as conventional forces closing with each other on the battlefield, but quickly devolved into a prolonged campaign against elusive, insurgent forces. The analyst's ability to correctly identify the tactical problem and analyze threats to discern their doctrine, tactics, organization, equipment, objectives, and capabilities ultimately leads to ascertaining threat intentions and actions. With knowledge of threat objectives, intentions, and capabilities, US forces can accurately plan and act to counter those threat intentions.

This thesis seeks to determine the effectiveness of USAIC intelligence analyst training regarding the threats and environments that the US Army will encounter during its operations throughout the world. To that end, this final chapter summarizes the discoveries that emerged from the interpretation of the research evidence. This chapter also answers the research questions and explains the significance of the conclusions to the field of study and makes recommendations for further inquiry.

Conclusions

This research project began by posing the primary research question: "Are the techniques and tools that the US Army Intelligence Center is using to train intelligence analysts enabling the analysts to define current threats?" This question was dissected into smaller, more manageable questions, that when answered, provide an appropriate solution to the primary question. With the problem defined in terms of the subordinate questions, it was necessary to

conduct a literature review--a comprehensive, thorough literature review provides a historical and theoretical framework that helps to establish perspective during the research process, determines previous research on the topic, and provides a background for developing and focusing the research question. The literature review also identifies patterns and finds gaps in the current literature that this thesis attempts to fill.

Four notable discoveries emerged from the literature review. One, not much has been written that pertains directly to the training of tactical intelligence analysts. While the US Army maintains three doctrinal manuals that explain the analysis process and its techniques, there does not appear to be much research dedicated toward the goal of how to effectively train tactical intelligence analysts. Two, what is written about analyst training is primarily concerned with the science of analysis--the models and techniques-- versus the art of analysis--how to train and develop the skills required to synthesize, correlate, and integrate information into a timely and meaningful picture for the commander. Three, current assessments of intelligence analyst performance during recent combat operations indicate that intelligence analysts are not providing their commanders with the estimates of threat forces and actions required to conduct decisive operations to defeat the threat. And four, while much has been written about the shortcomings of intelligence analyst training and performance, not much has been documented towards a solution to these problems.

The method this study used to collect, analyze, and interpret information centered around determining the doctrinal basis for conducting intelligence analysis followed by examining how the US Army Intelligence Center translates that doctrine into training plans for it analyst courses. Finally, the study reviewed observations concerning the performance of tactical intelligence analysts in recent operations and exercises as a means of determining the effectiveness of USAIC intelligence analyst training.

The Analysis chapter of this research study then presented, explained, analyzed, and interpreted the evidence collected by the literature review and the research design. The analysis chapter discussed the relationships in the evidence and explains how it relates to the research questions. Finally, the analysis chapter examines the impact of the research of unexpected discoveries, correlations, and research difficulties.

Analyst Performance in Units

To attack the primary research question most directly, this study will address the last subordinate research question first. The ultimate test of the USAIC analyst training effectiveness is borne out by how the analysts perform once at their units. Observations from units involved in current operations, Combat Training Center rotations, and Battle Command Training Program exercises indicate that analysts at all levels fail to provide the necessary support to their commanders and staffs in two major areas:

1. Assisting the commanders and staffs visualize the environment and the threat
2. Providing predictive analysis during planning and operations

The observations concerning visualizing the environment, battlespace, and threat focus on the failure of intelligence analysts to properly analyze and describe the effects of terrain and weather on both the friendly and threat forces, and analysts failing to provide a complete description of how the threat will fight. The USAIC provides analysts basic instruction on these topics during their Intelligence Preparation of the Battlefield training. There are numerous explanations for these failures; this study examines the two most prevalent--a flawed training methodology and lack of analyst understanding. Both of these problems are discussed below in the USAIC section.

The observations concerning the lack of predictive analysis can be explained by the fact that most intelligence analysts relied upon the analysis of their higher headquarters without

tailoring it for their unit or area of operations, in addition to failing to utilize all the tools and techniques that assist in predictive analysis. Again, analysts receive basic instruction on tools and techniques to assist with predictive analysis. What is noticeably missing most of the programs of instruction is any type of explanation of how to conduct predictive analysis.

Doctrine

Observers identified several basic problems with analyst performance at their units. To determine factors contributing to these problems, the study first examined the doctrinal basis for conducting analysis. A review of the three manuals that govern analysis (FM 2-0, Intelligence; FM 34-3, Analysis; and FM 2-01.3, Intelligence Preparation of the Battlefield) reveals that the doctrinal basis for conducting analysis is sound and complete. Taken together, the manuals offer a comprehensive exposition of the challenge to conducting analysis by identifying the emerging operational environment, categorizing critical variables that must be accounted for in this new environment, and then offering a detailed explanation of how to conduct analysis.

A secondary conclusion determined during the doctrine review and unit observations is that IPB remains a valid framework for describing a battlespace, its effects and the threats within that area. However, the current IPB model still has its shortcomings in this new contemporary operational environment--it relies upon a two- dimensional, geographic based template. This is in direct contravention to the COE with its defining characteristic being a threat that does not conform to previously identified patterns or templates.

How the USAIC Translates Doctrine into Analyst Training Observers identified several basic problems with analyst performance at their units. To determine factors contributing to these problems, the study next examined how the US Army Intelligence Center translates the doctrine into training plans for its analysts. The conclusions from the analyst performance section above indicate that the analyst shortcomings could be based upon two primary explanations--a flawed training methodology and lack of analyst understanding. A review of the USAIC training methodology suggests that the methodology of lecture instruction followed by topical practical exercises and culminating in a comprehensive exercise is a sound and effective methodology. Having eliminated training methodology as a cause, the focus turns to analyst understanding. The information available from the USAIC concerning their analyst training plans indicates several problems.

1. The USAIC does not dedicate enough time to training analysis. While the Intelligence Center's training objectives for all the courses appropriately revolve around training soldiers to become proficient analysts, only two of the four courses offer any specifically identified "analysis" training--the enlisted analyst Advanced Individual Training course and the Officer Transition Course. The most unexpected finding was the lack of any documented analysis training for the Officer Basic Course students. To be fair to the USAIC, it seems reasonable to assume that instructors informally offer students some direction on how to conduct analysis throughout the execution of the training and exercises. However, this does not seem an appropriate method to conduct crucial analytical training to any type of standard, especially in light of the course training objectives to prepare these young officers for positions in combat units.

2. The USAIC does not include Military Decision-Making Process (MDMP) training in its Enlisted Advanced Individual Training. All other analyst training courses provide instruction on how the intelligence analyst and intelligence cycle integrate into the MDMP. Not training enlisted analysts on how they and their products integrate into the greater staff planning process does not seem reasonable. By omitting this instruction, the USAIC is denying the

analysts the crucial linkage of how their actions support their commanders. This omission also denies the analyst the ability to exercise initiative capitalizing upon their understanding of how their actions and analysis affect their unit.
3. The USAIC has not updated its training to incorporate critical aspects of the emerging Contemporary Operational Environment. FM 2-0, Intelligence, specifically identifies eleven critical variables in the COE that must be studied and understood for analysts to properly present the actual environment to their commanders.
4. The USAIC training plans do not indicate any type of formal critical reasoning and creative thinking training. The USAIC continues to disregard its own findings concerning critical reasoning and creative thinking training for its analysts. The Intelligence Center identified the requirement to develop critical reasoning and creative thinking skills in its analysts in its 1997 Intelligence Training XXI plan to meet the training challenges for the emerging operational environment. The education and training communities are split on this particular topic. They do not universally accept the concept that a person can be trained or educated to improve the manner in which they think. However, as long as the Army expects young soldiers and officers to provide their commanders logical, predictive analysis on threat forces, it seems negligent not to provide these analysts the maximum training and education to improve their performance.

Recommendations

This thesis sought to determine the effectiveness of USAIC intelligence analyst training regarding the threats and environments that the US Army will encounter during its operations throughout the world. The primary recommendations below are focused on the USAIC, its programs of instruction and how the instruction is taught.
Based upon the analysis and conclusions, this study recommends the following additions to the USAIC program of instruction for its intelligence analysts.
1. If it can only make one change to its current program of instruction, the USAIC must incorporate critical reasoning and creative thinking into its analyst training programs. The first step in any problem-solving algorithm is to identify the correct problem. Comprehending the true tactical problem is crucial in understanding the threat and then developing his courses of action. Central to this process are critical reasoning and creative thinking. Being able to think all the way through the problem down to a solution is imperative. The Intelligence Center, itself, identified the requirement to develop critical reasoning and creative thinking skills in its analysts in its 1997 Intelligence Training XXI plan to meet the challenges for the emerging operational environment. The lack of critical reasoning and creative thinking training at the USAIC fails to arm analysts with the proper tools to reason through the problem to apply standard terrain and weather information and the analysis of higher headquarters to their own specific situation, unit, and area of operations. A thorough understanding of the analysis process and a solid grounding in critical reasoning and creative thinking is required for analysts to succeed in the new operational environment. Additionally, as the operational environment and the threat continue to change, the importance of applying creative thinking to such circumstances is crucial to the ability of analysts remain predictive.
2. Dedicate more time to training how to conduct analysis. The lack of dedicated training time for how to conduct analysis is a contributing factor to analysts not understanding the process. This is critically important in today's changing operational environment. The Enlisted Advanced Individual Training provides five days for its soldiers; this is appropriate for entry-level soldiers. The officer courses must provide more training to ensure that the officers have the skills and tools required to prepare them to be the proficient analysts that commanders seek.

3. The Enlisted Advanced Individual Training Course must include a familiarization with the Military Decision-Making Process, particularly how the analysts and their products integrate into the process. The USAIC is denying these smart soldiers the background instruction that will make them more effective in their units.
4. The USAIC must update its training to incorporate critical aspects of the emerging Contemporary Operational Environment as identified by doctrinal publications and emerging lessons learned from on-going operations.

Suggestions for Further Research

This research study only focused on several aspects of the larger problem of training tactical intelligence analysts so they can properly support their commanders. There is much more that needs to be studied in this field. Some suggestions for further research are as follows.
1. The national-level intelligence agencies conduct dedicated research and study on the topic of hiring the person with the optimum personality, skills, and traits to maximize their propensity for conducting analysis. The Army could borrow from this research to determine recruiting criteria so that only the people with the most potential for conducting effective analysis would be placed in the analyst military occupational specialties.
2. To gain a better understanding of what topics should be trained, more research needs to be dedicated to determining the skills required to synthesize, correlate, and integrate information. This could provide focus for future training plan development.
3. There are numerous analysis theories and techniques available; more research should be devoted to exploring the tactical application of these theories and techniques. 4. Tactical intelligence analysis is not exclusive; there are many professions and jobs that require the same type of analysis and prediction skills. More research could be focused on determining how other professions train their analysts and if these methods are applicable to training tactical intelligence analysts.
5. The USAIC training methodology is effective, but many different training methodologies exist that may compliment the current USAIC techniques to assist in analyst understanding. Some research should be concentrated on exploring innovative training techniques and methods that can enhance analyst understanding.
6. Within the Intelligence Preparation of the Battlefield model's fourth step of determining an enemy course of action, the first requirement calls for analyzing relative combat power. This concept works well when analyzing conventional forces, but does not seem effective when considering guerilla or insurgent forces and lower intensity conflict. With the emerging adaptive COE threats and the Army's current operations in Afghanistan and Iraq, the concept of analyzing relative combat power does not seem relevant. An option worthy of further exploration is the model contained within the Army's standard intelligence estimate format, which includes a section identified as "Enumeration," where a threat force's capabilities are expounded upon and develop into potential options, or courses of action.

This research project sought to address a gap in knowledge by examining the effectiveness of the USAIC methods for training the Army's tactical intelligence analysts. The observations of analyst performance in units point to a lack of analyst understanding that results in a failure to visualize and present the environment and threat and a lack of predictive analysis. The doctrine governing how to conduct analysis is comprehensive.
The USAIC translation of that doctrine into training plans results in several shortcomings that directly affect how analysts understand the key aspects of analysis, their role in the planning process and how they understand the new operational environment. The recommendations

follow directly from these conclusions and focus on analysts being trained in critical reasoning and creative thinking skills and dedicating more time to train the aspects of analysis so that analysts truly understand the process. This study is not all- inclusive, thus it recommends areas for future research focus on further understanding the skills required of analysts, determining how other professions requiring predictive analysis train their analysts and finally, integrating innovative training methods into the USAIC programs of instruction.